Overview

HPE ProLiant BL460c Gen10 Server Blade

Scale business performance and securely drive Traditional and Hybrid IT workloads across a converged infrastructure with the new HPE ProLiant BL460c Gen10 server blade for HPE BladeSystem. The HPE ProLiant BL460c Gen10 server blade helps drive new applications, turbo charge performance and transform into an agile, secure foundation, which with HPE OneView, places you on the path to Composable Infrastructure.

HPE ProLiant BL460c Gen10 Server Blade - Front View

1. Serial label pull tab (SUV Connector located behind)
2. Unique identification (UID) LED
3. Health status bar LED
4. Power Button
5. iLO USB connection
6. Quick access panel
7. Front hot-plug drive bays
8. NIC activity LED
9. Server blade release lever

What's New

- Intel® Xeon® Scalable Family Generation 2 processors (x2xx)
  - New level of performance per core processors
  - New workload Optimized processors for key categories of applications
- Additional Drive solutions
- European Union (ErP Lot9) standards information

Overview

ErP Lot9 Quick Summary

The European Parliament (ErP) is responsible for setting the ecological standards for products that are imported into the EU. The European Parliament Commission Regulation 2019/424 (also known as the ErP Lot 9 regulation) are a new set of product standards that deal with servers and data storage devices and goes into effect on March 1, 2020. Products that are not compliant with Lot 9 requirements cannot be imported into the European Union after March 1, 2020. For details see Tech Specs section of this document. See Configure to Order section for details on configurable options.

For additional information, please visit: **https://www.hpe.com/us/en/about/environment/msds-specs-more.html**

Documents provided by HPE: Lot 9 Declarations, White paper, and FAQ.

Platform Information

This document covers the HPE ProLiant BL460c Gen10 server blade only.

For information on HPE BladeSystems c-Class Enclosures and HPE BladeSystem c-Class Interconnect and Mezzanine Components, please see the following HPE BladeSystem c-Class QuickSpecs:

- HPE BladeSystem c3000 Enclosure QuickSpecs at
  https://www.hpe.com/h20195/v2/GetPDF.aspx/c04128340.pdf
  Notes: The c3000 HPE c-Class enclosures have full backwards and forwards compatibility, existing server blades are supported in the new enclosures and any future server blades will be supported in the existing enclosures.
- HPE BladeSystem c7000 Enclosure QuickSpecs at
  https://www.hpe.com/h20195/v2/GetPDF.aspx/c04128339.pdf
  Notes: The c7000 HPE c-Class enclosures have full backwards and forwards compatibility, existing server blades are supported in the new enclosures and any future server blades will be supported in the existing enclosures.
- HPE BladeSystem c-Class Interconnect and Mezzanine Components at
  https://www.hpe.com/us/en/integrated-systems/bladesystem.html

Notes:

– For optimal cooling and system performance the BL460c Gen10 Server Blade requires the c7000 enclosure to be configured with 10 fans and the c3000 enclosure to be configured with 6 fans.

– For proper BladeSystem operation, the minimum required versions of HPE Onboard Administrator and HPE Virtual Connect are required and available via the HPE Service Pack for ProLiant, please see **http://h17007.www1.hpe.com/us/en/enterprise/servers/products/service_pack/spp/index.aspx**

Form Factor

HPE ProLiant BL460c Gen10 is a half-height server blade that plugs into the HPE BladeSystem c3000 and c7000 enclosures.

Processors

Up to 2 of the following depending on model.

Notes: For more information regarding Intel Xeon processors, please see the following

http://www.intel.com/xeon

Intel® Xeon® Scalable Processor Family - 2nd Generation					
Intel Xeon Models	**CPU Frequency (GHz)**	**Cores**	**Power (WATTs)**	**DDR4 MT/s**	**Max Memory per socket (TeraBytes)**
Platinum 8256 Processor	3.8	4	105	2933	1
Platinum 8253 Processor	2.2	16	125	2933	1
Gold 6262V Processor	1.9	24	135	2400	1
Gold 6252 Processor	2.1	24	150	2933	1
Gold 6248 Processor	2.5	20	150	2933	1
Gold 6242 Processor	2.8	16	150	2933	1
Gold 6240Y Processor*	2.6-2.8-3.1	18-14-8	150	2933	1
Gold 6240 Processor	2.6	18	150	2933	1
Gold 6238 Processor	2.1	22	140	2933	1
Gold 6230 Processor	2.1	20	125	2933	1
Gold 6226 Processor	2.7	12	125	2933	1
Gold 6222V Processor	1.8	20	115	2400	1
Gold 5222 Processor	3.8	4	105	2933	1
Gold 5220 Processor	2.2	18	125	2666	1
Gold 5220S Processor	2.7	18	125	2666	1
Gold 5218B Processor	2.3	16	125	2666	1
Gold 5218 Processor	2.3	16	125	2666	1
Gold 5217 Processor	3	8	115	2666	1
Gold 5215 Processor	2.5	10	85	2666	1
Silver 4216 Processor	2.1	16	100	2400	1
Silver 4215 Processor	2.5	8	85	2400	1

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Silver 4214Y Processor*	2.2-2.3-2.4	12-10-8	85	2400	1
Silver 4214 Processor	2.2	12	85	2400	1
Silver 4210 Processor	2.2	10	85	2400	1
Silver 4208 Processor	2.1	8	85	2400	1
Bronze 3204 Processor	1.9	6	85	2133	1

Notes:

- All processors are as is and are subject to change from HPE or Intel.

- Memory per socket is based on the processor maximum supported memory, not the BL460c memory maximum.

- Platinum - 8200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2933 MT/s supporting up to 1TB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology supported. Intel AVX-512 (2x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, Node Controller Support, Advanced RAS supported.

- Gold -6200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2933 supporting up to 1TB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512 (2x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, Node Controller Support, Advanced RAS supported.

- Gold - 5200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2666MHz (SKU 5222=supports 2933), supporting up to 1TB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA) (SKU 5222 supports 2x 512 bit FMA), VNNI, 48 lanes PCIe 3.0, Advanced RAS supported.

- Silver - 4200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 9.6 GT/s, 6-Channel DDR4 @ 2666 MHz supporting up to 1TB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, standard RAS supported.

- Bronze - 3200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 9.6 GT/s, 6-Channel DDR4 @ 2133MHz supporting up to 1TB memory capacity. Intel AVX-512(1x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, standard RAS supported.

- Y processors come with Intel Speed Select. These processors allow Core selection at boot through HPE RBSU. Cores selected determine Frequency at which processor operates. Processor provides capability to configure and operate at 3 distinct operating points. Core count selected sets frequency of operations (Lower Core = Higher Frequency). Static Boot Time Configuration: BIOS discovers and prompts for setting at boot only. Frequency may vary.

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Intel® Xeon® Scalable Processor Family - 1st Generation					
Intel Xeon Models	**CPU Frequency**	**Cores**	**Power**	**QPI**	**DDR4 MT/s**
Platinum Processors					
Platinum 8164 Processor	2.0 GHz	26	150W	3 @ 10.4 GT/s	2666 MT/s
Platinum 8160 Processor	2.1 GHz	24	150W	3 @ 10.4 GT/s	2666 MT/s
Platinum 8158 Processor	3.0 GHz	12	150	3 @ 10.4 GT/s	2666 MT/s
Platinum 8153 Processor	2.0 GHz	16	125	3 @ 10.4 GT/s	2666 MT/s
Gold Processors					
Gold 6152 Processor	2.1 GHz	22	140W	3 @ 10.4 GT/s	2666 MT/s
Gold 6148 Processor	2.4 GHz	20	150W	3 @ 10.4 GT/s	2666 MT/s
Gold 6142 Processor	2.6 GHz	16	150W	3 @ 10.4 GT/s	2666 MT/s
Gold 6140 Processor	2.3 GHz	18	140W	3 @ 10.4 GT/s	2666 MT/s
Gold 6138 Processor	2.0 GHz	20	125W	3 @ 10.4 GT/s	2666 MT/s
Gold 6136 Processor	3.0 GHz	12	150W	3 @ 10.4 GT/s	2666 MT/s
Gold 6134 Processor	3.2 GHz	8	130W	3 @ 10.4 GT/s	2666 MT/s
Gold 6132 Processor	2.6 GHz	14	140W	3 @ 10.4 GT/s	2666 MT/s
Gold 6130 Processor	2.1 GHz	16	125W	3 @ 10.4 GT/s	2666 MT/s
Gold 6128 Processor	3.4 GHz	6	115W	3 @ 10.4 GT/s	2666 MT/s
Gold 6126 Processor	2.6 GHz	12	125W	3 @ 10.4 GT/s	2666 MT/s
Gold 5122 Processor	3.6 GHz	4	105W	2 @ 10.4 GT/s	2666 MT/s
Gold 5120 Processor	2.2 GHz	14	105W	2 @ 10.4 GT/s	2400 MT/s
Gold 5118 Processor	2.3 GHz	12	105W	2 @ 10.4 GT/s	2400 MT/s
Gold 5115 Processor	2.4 GHz	10	85W	2 @ 10.4 GT/s	2400 MT/s
Silver 4116 Processor	2.1 GHz	12	85W	2 @ 9.6 GT/s	2400 MT/s
Silver 4114 Processor	2.2 GHz	10	85W	2 @ 9.6 GT/s	2400 MT/s
Silver 4112 Processor	2.6 GHz	4	85W	2 @ 9.6 GT/s	2400 MT/s
Silver 4110 Processor	2.1 GHz	8	85W	2 @ 9.6 GT/s	2400 MT/s
Bronze Processors					
Bronze 3104 Processor	1.7 GHz	6	85W	2@ 9.6 GT/s	2133 MT/s

Standard Features

Notes:

– For more information regarding Intel Xeon processors, please see the following
http://www.intel.com/xeon

– Intel Xeon Platinum 8160M, Gold 6142M, 6140M, and 6134M support extended memory capacities up to 1.5TB per socket versus 768GB per socket for standard processors. However, maximum memory capacity for the server will be limited by maximum capacity DIMMs available and number of DIMM slots. The BL460c Gen10 will support a maximum memory capacity of 512GB per socket with 64GB DIMMs regardless of processor chosen. This maximum will increase as larger capcity DIMMs are qualified for the server.

– When using processors of 135W or greater, 10 fans are required in the c7000 for optimal performance.

– Memory per socket is based on the processor maximum supported memory, not the BL460c memory maximum.

– Platinum - 8100 Series - 2S - 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2666 MT/s, 768 GB memory capacity (1.5 TB on select skus), Intel Turbo Boost Technology, Intel Hyper-Threading Technology

– Intel AVX-512 (2x 512-bit FMA), 48 lanes PCIe 3.0, advanced RAS.

– Gold - 5100, 6100 Series - 2S - 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2400 MHz (SKU 5122=supports 2666), 768 GB memory capacity (1.5 TB on select skus), Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA) (SKU 5122 supports 2x 512 bit FMA), 48 lanes PCIe 3.0, advanced RAS.

– Silver - 4100 Series - 2S - 2UPI @ 9.6 GT/s, 6-Channel DDR4 @ 2400 MHz, 768 GB memory capacity, Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS.

Chipset

Intel C621 Chipset

Notes: For more information regarding Intel chipsets, please see the following:
http://www.intel.com/content/www/us/en/chipsets/chipsets-overview.html

On System Management Chipset

HPE iLO 5 ASIC

Notes: Read and learn more in the **iLO QuickSpecs**.

Memory

One of the following depending on Model

The following memory supports Intel® Xeon® Scalable processor family 2nd generation

- HPE 8GB (1x8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit
- HPE 16GB (1x16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit
- HPE 16GB (1x16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit
- HPE 32GB (1x32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit
- HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit

Standard Features

- HPE 64GB (1x64GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 LRDIMM Smart Memory Kit
- HPE 128GB (1x128GB) Octal Rank x4 DDR4-2933 CAS--24-21-21 LRDIMM Smart Memory Kit
- The following memory supports Intel® Xeon® Scalable processor family 1st generation
- HPE 8GB (1x8GB) Single Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit
- HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit
- HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit
- HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit
- HPE 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 LRDIMM Smart Memory Kit
- HPE 128GB (1x128GB) Octal Rank x4 DDR4-2666 CAS-22-19-19 LRDIMM Smart Memory Kit

Type

- HPE SmartMemory
- DDR4 Load Reduced (LRDIMM), or Registered (RDIMM)

Standard (Pre-configured Models)

- 128GB (4 x 32GB) DDR4 2666MT/s LDIMMs at 1.2V
- 64GB (4x 16GB) DDR4 2666MT/s RDIMMs at 1.2V
- 16GB (2 x 8GB) DDR4 2666MT/s RDIMMs at 1.2V

Maximum (LRDIMM)

- 2TB
  - 16 x 128GB up to 2666MT/s at 1.2V (processor dependent)
  - 16 x 128GB up to 2933MT/s at 1.2V (Gen2 processor dependent)

Maximum (RDIMM)

- 1TB
  - 16 x 32GB up to 2666MT/s at 1.2V
  - 16 x 64GB up to 2933MT/s at 1.2V(Gen2 processor dependent)

Notes:

- HPE memory from previous generation servers is not supported with this server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen10. For additional information, please see the HPE SmartMemory QuickSpecs at: **HPE DDR4 SmartMemory QuickSpecs**.

- LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server. Depending on the memory configuration and processor model, the memory speed may run at 2666MT/s, 2400MT/s, 2133MT/s, or 1866MT/s. Please see the Online Memory Configuration Tool a **https://memoryconfigurator.hpe.com/DDR4memoryconfig/Home/SelectServer**

Standard Features

Memory Protection

- Advanced ECC
- Memory Mirroring
- Memory Online Spare Mode (Rank Spare Mode)

Network Controller

One of the following depending on Model

- One (1) 20Gb 2-port FlexFabric FLB, 10Gb 2-port HPE FlexFabric FLB, or 10Gb 2-port Ethernet FLB
  Notes:
  - Supports FCoE, TCP/IP offload engine, hardware-based accelerated iSCSI, iSCSI boot, and autosensing 10Gb/1Gb Ethernet.
  - Each port is autosensing the speed, and can interoperate with 1Gb HPE BladeSystem c-Class interconnect components. Both ports will operate at the same speed.
  - FlexFabric capabilities require the use of an HPE Virtual Connect FlexFabric or Flex10/10D module.
    Fibre Channel over Ethernet (FCoE) is supported with HPE interconnects. Learn more at:
    https://www.hpe.com/us/en/integrated-systems/virtual-connect.html
- One (1) HPE FlexFabric 10Gb 2-port 536FLB FlexibleLOM
- One (1) HPE FlexFabric 10Gb 2-port 560FLB FlexibleLOM
- One (1) HPE FlexFabric 20Gb 2-port 630FLB FlexibleLOM
- One (1) HPE FlexFabric 20Gb 2-port 650FLB FlexibleLOM
  Notes: FlexibleLOMs are not compatible with c-Class server blades prior to Gen9.
- Standard iLO Network Controller:
  One (1) 10/100 Mbps port for the HPE iLO 5 to Onboard Administrator link. The Onboard Administrator (with 10/100/1000 Mbps) to BladeSystem link is 1Gbps

Expansion Slots

Two (2) I/O expansion mezzanine slots:

- x16 PCIe 3.0 Type A (supports Type A mezzanine cards) (expansion slot 1).
  Notes: This expansion slot supports dual-port mezzanine cards: one port is routed to interconnect module bay 3 and the other to bay 4.
- x16 PCIe 3.0 Type B (supports Type A and Type B mezzanine cards (expansion slot 2).
  Notes:
  - This expansion slot supports dual-port and quad-port mezzanine cards. For dual-port cards, one port is routed to interconnect module bay 5 and the other to bay 6. For quad-port cards, one port is routed to interconnect module bay 5, one to bay 6, one to bay 7, and one to bay 8.
  - A second processor must be installed (in processor slot 2) to have access to the second expansion slot (expansion slot 2).

Mezzanine card options include:

- Dual-port 20Gb FlexFabric, Dual-port 10Gb FlexFabric, and 10GbE options,.
- Dual-port 16Gb Fibre Channel HBA for SAN connectivity.
- QDR and FDR InfiniBand for low latency and high bandwidth server interconnectivity.
- I/O accelerator mezzanine options for high transaction rate local storage

HPE Server ROM

HPE ROM (read only memory) is now digitally signed using the HPE Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing

Standard Features

malicious efforts to corrupt system ROM.

HPE ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system.

HPE ROM performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis.
The HPE ProLiant ROM is used to configure the following:

- Processor and chipset status registers
- System memory, memory map, and memory initialization
- System hardware configuration (integrated PCI devices and optional PCIe cards).
- Customer-specific BIOS configuration using the HPE ROM-Based Setup Utility (RBSU).

HPE Server UEFI /Legacy ROM

Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration while interacting with your server at boot time. HPE ProLiant Gen10 platform defaults to UEFI and can be factory or field configured for Legacy BIOS Boot Mode.
Notes: The UEFI System Utilities function is analogous to the HPE ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit
http://itdoc.hitachi.co.jp/manuals/ha8000v/hard/Gen10/UEFI/881334-004_en.pdf

UEFI enables numerous new capabilities specific to HPE ProLiant servers such as:

- Secure Boot
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.0 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool using HPE RESTful API
- PXE boot support for IPv6 networks
- Boot support for option cards that only support a UEFI option ROM

Notes:

– For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI.

– HPE Legacy FIO Setting (758959-B22) can be selected to configure the system in Legacy mode in the factory.

Standard Features

Storage Controller

All BTO Models

One (1) HPE Smart Array P204i-b 12G SAS modular Controller with 1GB Flash-Backed Write Cache (FBWC), or HPE Smart Array S100i SR Gen10 SW RAID.

Notes:

– The HPE Smart Array P204i-b and the HPE Smart Array S100i SR Gen10 SW RAID (chipset SATA) support up to two (2) small form factor (SFF) or 4 ultra form factor (uFF) hot plug drive bays.

– For NVMe support, please select the NVMe FIO setting (873373-B21) available on CTO models only.

Maximum Internal Storage

Two drives bays for SFF HPE Smart Drives. Capacities dependent on drive size selected.

Notes: The ProLiant BL460c Gen10 server blade includes the HPE hot plug small form factor (SFF) SmartDrive carrier for enhanced management and reduced maintenance errors. HPE drives from previous generation servers (prior to Gen8) are not compatible with the ProLiant BL460c Gen10 drive bays

Interfaces

- Micro SDHC Slot
  One (1) internal Micro Secure Digital High Capacity (Micro SDHC) card slot
- USB 3.0 Port
  One (1) internal USB 3.0 connector for USB flash media drive keys

Notes: The above options are intended for integrated hypervisor virtualization environments.

Industry Standard Compliance

- ACPI 6.1 Compliant
- PCIe 3.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- USB 3.0 Compliant (internal); USB 2.0 Compliant (external ports via SUV)
- SMBIOS 3.1
- UEFI 2.6
- Redfish API
- ErP Lot9 (see Technical Specifications see **HPE Environmental Declarations website** for HPE Lot9 Declarations, a White Paper, FAQs and products list of verified products)

Notes: See requirements at end of this document or in OCA for valid configurations to meet Erp Lot9 requirements.

Operating Systems and Virtualization Software Support for ProLiant Servers

- Microsoft Windows Server
- VMware
- Red Hat Enterprise Linux Server
- SUSE Linux Enterprise Server

For specific OS support information please visit Server Operating Systems and Virtualization Software - links found at

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https://www.hpe.com/us/en/servers/server-operating-systems.html or **http://h17007.www1.hpe.com/us/en/enterprise/servers/supportmatrix/redhat_linux.aspx#.WuyQvk3rtaQ**
Notes: For more information on the HPE Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrices at:

- **http://h17007.www1.hpe.com/us/en/enterprise/servers/supportmatrix/windows.aspx**
- **http://h17007.www1.hpe.com/us/en/enterprise/servers/supportmatrix/oracle_linux.aspx**
- **http://h17007.www1.hpe.com/us/en/enterprise/servers/supportmatrix/vmware.aspx**
- and our driver download page: **http://h17007.www1.hpe.com/us/en/enterprise/servers/supportmatrix/vmware.aspx#.WuyRBE3rtaQ**

Security Features

- UEFI Secure Boot and Secure Start support
- Immutable Silicon Root of Trust
- Support for Commercial National Security Algorithms (CNSA)
- iLO Security Modes including a New iLO Advance Premium Security License
- Granular control over iLO interfaces
- Tamper-free updates - components digitally signed and verified
- Secure Recovery - recover critical firmware to known good state on detection of compromised firmware
- TPM (Trusted Platform Module) 1.2 option
- TPM (Trusted Platform Module) 2.0 option Bezel Locking Kit

Enclosures

Hewlett Packard Enterprise offers two different c-Class server blade enclosures to meet your individual needs:

- The HPE BladeSystem c7000 rack enclosure is 10U high and holds up to sixteen (16) ProLiant BL460c Gen10 servers plugged vertically.
- The HPE BladeSystem c3000 rack enclosure is 6U high and holds up to eight (8) HPE ProLiant BL460c Gen10 servers plugged horizontally.

Server blades, interconnect modules, power supplies, fans, and redundant Onboard Administrator modules are all designed to fit into the c3000 and c7000 enclosures.
Notes: For additional enclosure information, please see: **https://www.hpe.com/us/en/product-catalog/storage/disk-enclosures/pip.hpe-bladesystem-c7000-enclosures.1844065.html**

Graphics

Integrated Matrox G200eh video controller

- 1600 x 1200 (32 bpp)
- 1920 x 1200 (16 bpp)

HPE iLO Management On System Management Memory

- 16 MB Flash Video Memory
- 256 MB DDR 3 with ECC (112 MB after ECC and video)

HPE Server UEFI / Legacy ROM

Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration than the legacy ROM while interacting with your server at boot time. HPE ProLiant Gen10 servers have a UEFI Class 2 implementation and support both UEFI Mode (default) and Legacy BIOS Mode.

Standard Features

Notes: The UEFI System Utilities tool is analogous to the ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit **http://itdoc.hitachi.co.jp/manuals/ha8000v/hard/Gen10/UEFI/881334-004_en.pdf**
UEFI enables numerous new capabilities specific to HPE ProLiant servers such as:

- Secure Boot and Secure Start enable for enhanced security
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.0 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool using iLO RESTful API that is Redfish API Conformant.
- PXE boot support for IPv6 networks
- Workload Profiles for simple performance optimization

UEFI Boot Mode only:

- TPM 2.0 Support
- NVMe Boot Support
- Platform Trust Technology (PTT) can be enabled.
- iSCSI Software Initiator Support.
- HTTP/HTTPs Boot support as a PXE alternative.
- Boot support for option cards that only support a UEFI option ROM

Notes:

– For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI.

– Legacy FIO Setting (758959-B22) can be selected to configure the system in Legacy mode in the factory for your HPE ProLiant Gen10 Server.

Embedded Management

HPE Integrated Lights-Out (HPE iLO)
Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Learn more at **http://www.hpe.com/info/ilo**

UEFI
Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at **http://itdoc.hitachi.co.jp/manuals/ha8000v/hard/Gen10/UEFI/881334-004_en.pdf**

Intelligent Provisioning
Hassle free server and OS provisioning for one or more servers with Intelligent Provisioning. Learn more at **http://www.hpe.com/servers/intelligentprovisioning**

iLO RESTful API
iLO RESTful API is Redfish API conformantce and offers simplified server management automation such as configuration and maintenance tasks based on modern industry standards.
http://www.hpe.com/info/restfulapi

Server Utilities

Standard Features

Active Health System
The HPE Active Health System (AHS) is an essential component of iLO management portfolio that provides continuous, proactive health monitoring of HPE servers. **http://www.hpe.com/servers/ahs**

Active Health System Viewer
Use the Active Health System Viewer, a web-based portal, to easily read AHS logs and speed problem resolution with HPE self-repair recommendations, to learn more visit: **http://www.hpe.com/servers/ahsv**

Smart Update
Keep your servers up to date with the HPE~~'s~~ Smart Update solution by using Smart Update Manager (SUM) to optimize the firmware and driver updates of the Service Pack for ProLiant (SPP). Learn more at **https://www.hpe.com/us/en/servers/smart-update.html**

iLO Amplifier Pack
Designed for large enterprise and service provider environments with hundreds of HPE servers, the iLO Amplifier Pack is a free, downloadable open virtual application (OVA) that delivers the power to discover, inventory and update Gen8, Gen9 and Gen10 HPE servers at unmatched speed and scale. Use with an iLO Advanced License to unlock full capabilities. Learn more at **http://www.hpe.com/servers/iLOamplifierpack**

HPE iLO Mobile Application
Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: **http://www.hpe.com/info/ilo/mobileapp**

RESTful Interface Tool
RESTful Interface tool (iLOREST) is a single scripting tool to provision using iLO RESTful API to discover and deploy servers at scale. Learn more at **http://www.hpe.com/info/resttool**

Scripting Tools
Provision one to many servers using your own scripts to discover and deploy with Scripting Toolkit (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. Learn more at **http://www.hpe.com/servers/stk** or **http://www.hpe.com/servers/powershell**

HPE OneView Standard
HPE OneView Standard can be used for inventory, health monitoring, alerting, and reporting without additional fees. It can monitor multiple HPE Servers generations. The user interface is similar to the HPE OneView Advanced version, but the software-defined functionality is not available. **http://www.hpe.com/info/oneview**

Optional Features

Fibre Channel Support

Up to two (2) optional 16Gb Fibre Channel mezzanine HBAs are supported on the HPE ProLiant BL460c Gen10.

Compatible SAN

HPE ProLiant BL460c Gen10 server blades are optimized for HPE MSA, EVA, 3PAR and XP.
HPE ProLiant BL460c Gen10 server blades are compatible with select 3rd party SANs. Please see blade storage page for more details at **https://www.hpe.com/us/en/integrated-systems/bladesystem.html**.

HPE Virtual Connect

HPE Virtual Connect is an interconnect option for c-Class BladeSystem that simplifies server connectivity to data and storage networks, and reduces costs. Unique HPE Flex-10 technology makes maximum use of network bandwidths, provide dynamic tuning and enable extreme flexibility to meet individual server and infrastructure requirements by allocating up to 4 network connections per server port. Virtual Connect FlexFabric modules extend those capabilities to allocate one function per port to storage connections (FCoE).

HPE OneView's software-defined approach to infrastructure management enables central console to administer network connections and workloads for thousands of servers, see **https://www.hpe.com/us/en/integrated-systems/management-software.html**

For more information on Virtual Connect Ethernet, Fibre Channel, Converged Network and management options, see **https://www.hpe.com/us/en/integrated-systems/virtual-connect.html**

Server Management

HPE OneView Advanced

HPE OneView brings a new level of automation to infrastructure management by taking a template driven approach to provisioning, updating, and integrating compute, storage, and networking infrastructure. It provides full-featured licenses which can be purchased for managing Gen8 Gen9 and Gen10 servers.
http://www.hpe.com/info/oneview

HPE Insight Control

Notes: Insight Control is not supported with Gen10 server blades.

HPE iLO

HPE iLO licenses offer smart remote functionality without compromise, for all HPE ProLiant servers. The license includes the full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality
https://www.hpe.com/us/en/servers/integrated-lights-out-ilo.html

HPE OneView

Powerful converged management of servers, storage, and network for IT service automation and infrastructure simplicity.

Optional Features

HPE iLO Advanced Premium Security Edition
HPE iLO Advanced Premium Security Edition for iLO 5 includes iLO Advanced License plus high-end security modes, unique security capabilities, like Automatic FW recovery; Runtime FW verification, and Secure erase. **http://www.hpe.com/servers/ilopremium**

HPE Matrix Operating Environment

The HPE Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business. The HPE Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HPE CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS).

For more information, visit: **http://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?productNumber=HPID**

HPE Cluster Platforms
HPE Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. **https://www.hpe.com/us/en/solutions/hpc-high-performance-computing.html**

HPE HPC Interconnects
High Performance Computing (HPC) interconnect technologies are available for this server as part of the HPE Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by Hewlett Packard Enterprise when integrated within an HPE cluster.

Get connected to HPE
To get the most from your investment in Hewlett Packard Enterprise servers, get connected to Hewlett Packard Enterprise using our innovative remote support technology which provides system health monitoring, pre-failure alert notification and more.

Expansion Blade Support
Supports one (1) optional PCI Expansion Blade
Notes:

- D2200sb and D2220sb storage blades are not compatible with BL460c Gen10 server blade.
- Gen9 and older HPE option cards will not function in PCI Expansion Blade when paired with a BL460c Gen10 server blade

Factory Express Portfolio for Servers and Storage
HPE Factory Express offers configuration, customization, integration and deployment services for Hewlett Packard Enterprise servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. Hewlett Packard Enterprise products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE ProLiant Server Blades,

Optional Features

HPE BladeSystem, HPE 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services on your specific server model please contact your sales representative or go to: **https://www.hpe.com/us/en/services/factory-express.html**

One Config Simple (SCE)

SCE is a guided self-service tool to help sales and non-technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact Hewlett Packard Enterprise Customer Business Center or an Authorized Partner for assistance. **https://h22174.www2.hpe.com/SimplifiedConfig/Welcome#**

Protect your business beyond warranty with HPE Support Services

HPE Pointnext provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation. From the onset of your transformation journey, Advisory and Transformational Services focus on designing the transformation and creating a solution roadmap. Professional Services specializes in creative configurations with flawless and on-time implementation, and on-budget execution. Finally, operational services provides innovative new approaches like Flexible Capacity and Datacenter Care, to keep your business at peak performance. HPE is ready to bring together all the pieces of the puzzle for you, with an eye on the future, and make the complex simple.

Connect your devices:

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77%[1] reduction in down time, near 100%[2] diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HPE support.

Notes:

– [1]IDC

– [2]HP CSC reports 2014 - 2015

Learn more about getting connected at **http://www.hpe.com/services/getconnected**

Proactive Care service levels

HPE Proactive Care* with 24x7 coverage, three year Support Service

HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice This Service combines three years proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers. **https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf**

HPE Proactive Care Advanced* - 24x7 coverage, three year Support Service

This service helps achieve a higher return on your product investment with personalized support from a local assigned Account Support Manager who will share best practice advice and personalized recommendations designed to help improve availability and performance to increase stability and reduce unplanned downtime. Leverage your system's ability to connect to HPE for pre-failure alerts, automatic call logging and parts dispatch. For business critical incidents, this service offers critical event management to reduce mean time to resolution. This recommendation provides 24x7 coverage with four-hour response for hardware and collaborative support that offers two-hour callback for supported software issues. Collaborative software management is included with independent software vendors unless you have your software support from HPE where we own all cases from start through to resolution.
https://www.hpe.com/h20195/v2/getdocument.aspx?docname=4AA5-3259ENW

Notes: HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to make the most of these services and receive all the deliverables.

Other related Services

HPE Installation and Startup Service

Provides for the installation and startup of HPE technology including BladeSystem, C-Class enclosure, HPE ProLiant c-Class and Integrity server blades, storage blades, SAN switch blades, HPE Virtual Connect modules (Ethernet and Fibre Channel), Ethernet network interconnects, and InfiniBand, as well as the installation of one supported operating system type (Windows® or Linux).

HPE Server Hardware Installation

Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

HPE Datacenter Care service

HPE Datacenter Care helps improve IT stability and security, increase the value of IT, and enable agility and innovation. It is a structured framework of repeatable, tested, and globally available services "building blocks." You can deploy, operate, and evolve your datacenter wherever you are on your IT journey. With HPE Datacenter Care, you benefit from a personalized relationship with HPE via a single point of accountability for HPE and others' products. For more information, visit
https://h20195.www2.hpe.com/v2/GetPDF.aspx/4AA4-0459ENW.pdf

HPE Flexibly Capacity

With Flexible Capacity, you get the speed, scalability, and economics of the public cloud in the privacy of your data center. Gain the advantages of the public cloud—consumption-based payment, rapid scalability without worrying about capacity constraints. Reduce the "heavy lifting" needed to operate a data center. And retain the advantages that IT provides the business (i.e., control, security). Deliver the right user experience, choose the right technology for the business, manage privacy and compliance, and manage the cost of IT. And, you have the option to use the public cloud when needed.

HPE Factory Express for Servers and Storage

HPE Factory Express offers configuration, customization, integration and deployment services for HPE servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.
Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HPE products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE Apollo, HPE ProLiant Server Blades, HPE BladeSystem, HPE 9000 servers as well as the MSAxxxx3PAR suite, XP, rackable tape libraries and configurable network switches.

HPE Technology Services Support Credits offer flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment.
http://www.hpe.com/ww/learn

Service and Support

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers. Learn more **http://www.hpe.com/support/hpesc**

The HPE Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.

HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.

Notes: *HPE Support Center Mobile App is subject to local availability. For more information: **http://www.hpe.com/services**

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Configuration Information

This section lists some of the steps required to configure a Factory Integrated Model (configure-to-order or CTO server). To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of an Hewlett Packard Enterprise approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.

Notes:

– Configure-to-order server blades must start with a CTO Blade Server.

– FIO indicates that this option is only available as a factory installable option.

– All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

Step 1: Base Server Blade Configuration

Select a configurable Blade

HPE highly recommends using the HPE Power Advisor tool to ensure the number of power supply options you have selected can fully support your BladeSystem configuration and to review maximum system power ratings for facilities planning purposes.

The HPE Power Advisor is available at: **http://www.hpe.com/servers/hppoweradvisor**

Models provided below are for current Intel Scalable Family Processors Generation 2

HPE ProLiant BL460c Gen10 v6 10/20Gb FlexibleLOM Configure-to-order Blade Server	P09524-B21
HPE ProLiant BL460c Gen10 v6 10/20Gb FlexibleLOM TAA-compliant Configure-to-order Blade Server	P09525-B21

Notes: Trade Agreement Act (TAA) and means that these SKUs are manufactured in countries that are part of the global trade act. This provides greater security assurance that these servers come from countries that signed the agreement act. This is particularly important to HPE customers in our federal sector and other verticals that have concerns about the country of origin for our solutions.

Configurable Models ship with:

- One (1) FlexibleLOM connector providing a choice for one (1) of the supported 10Gb/20Gb FlexibleLOMs (see Step 2)
- Two (2) HPE small form factor hot-plug SAS/SATA/ HDD or SSD hard drive bays
- Two (2) x16 PCIe I/O expansion slots (one Type A, one Type A/B)
- One (1) integrated USB connector and one (1) MicroSDHC connector
- One (1) TPM connector
- HPE iLO Management (standard)

Step 2: Choose Required Options

One of the following from each list unless otherwise noted

HPE Processors

HPE Synergy Gen10 products now support two generations of processors. As noted above in Step 1, you select the CTO Model for which generation processor you would like. Step 2 now lists the Generation 2 and 1 processors you have available.

Notes:

Configuration Information

– All configure-to-order processor kits (i.e. xxxxxx-L21) contain one (1) processor.

– If two processors are desired, select one xxxxxx-L21 here in Step 2 and one xxxxxx-B21 in Step 4.

Intel Scalable Family Processors - Generation 2 (x2xx Models)

Notes:

– All configure-to-order processor kits (i.e. xxxxxx-L21) contain one (1) processor.

– If two processors are desired, select one xxxxxx-L21 here in Step 2 and the corresponding xxxxxx-B21 for the same processer model in Step 4.

ErP LOT 9 (Commision Regulation (EU) 2019/424)

The ErP Lot 9 directive is associated with the EU circular economy initiative and will have an impact on energy and disclosure requirements for servers and storage products. The intent of the ErP Lot 9 initiative is to reduce the environmental footprint of server and storage products by reducing energy usage and allowing server and storage systems to be more efficiently reused and recycled. Energy requirements include power supply efficiency, idle power limits, and active power efficiency. The ErP Lot 9 regulations will go into effect for all products placed on the market in the EU member countries after March 1, 2020. EU countries include Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom(status TBD).
A summary of the HPE Synergy 480 Gen10 requirements are listed here. Configuration rules for compliant products are included in the HPE order entry system. HPE Factory order has rules set internal to avoid mis-configuration of any system intended for Lot9 country.

Step 2a: Choose Required Options - Processors

HPE BL460c Gen10

- For ErP Lot9 all 2 processor configurations are fully compliant.
- For Single Processor configurations: Intel® Bronze 3104, 3204, Silver 4112, Gold 5122 & 5222 and Platinum 8256 are non-compliant and are not offered in configuration.
- Platinum power supplies only are compliant.
- There are no additional memory, drive restrictions

Intel Xeon-Platinum Processors

Intel Xeon-Platinum 8256 (3.8GHz/4-core/105W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P11877-L21
Intel Xeon-Platinum 8253 (2.2GHz/16-core/125W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P11876-L21

Intel Xeon-Gold Processors

Intel Xeon-Gold 6262V (1.9GHz/24-core/135W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P11875-L21
Intel Xeon-Gold 6252 (2.1GHz/24-core/150W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06821-L21
Intel Xeon-Gold 6248 (2.5GHz/20-core/150W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06820-L21

Configuration Information

Intel Xeon-Gold 6242 (2.8GHz/16-core/150W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06819-L21
Intel Xeon-Gold 6240Y (2.6GHz/18-14-8-core/150W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06967-L21
Intel Xeon-Gold 6240 (2.6GHz/18-core/150W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06818-L21
Intel Xeon-Gold 6238 (2.1GHz/22-core/140W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P11873-L21
Intel Xeon-Gold 6230 (2.1GHz/20-core/125W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06817-L21
Intel Xeon-Gold 6226 (2.7GHz/12-core/125W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P11870-L21
Intel Xeon-Gold 6222V (1.8GHz/20-core/115W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P11869-L21
Intel Xeon-Gold 5222 (3.8GHz/4-core/105W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P11865-L21
Intel Xeon-Gold 5220S (2.7GHz/18-core/125W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P11864-L21
Intel Xeon-Gold 5220 (2.2GHz/18-core/125W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06816-L21
Intel Xeon-Gold 5218B (2.3GHz/16-core/125W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P11862-L21
Intel Xeon-Gold 5218 (2.3GHz/16-core/125W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06815-L21
Intel Xeon-Gold 5217 (3.0GHz/8-core/115W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06813-L21
Intel Xeon-Gold 5215 (2.5GHz/10-core/85W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06811-L21

Intel Xeon-Silver Processors

Intel Xeon-Silver 4216 (2.1GHz/16-core/100W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06810-L21
Intel Xeon-Silver 4215 (2.5GHz/8-core/85W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06809-L21
Intel Xeon-Silver 4214Y (2.2GHz/12-10-8-core/85W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06966-L21
Intel Xeon-Silver 4214 (2.2GHz/12-core/85W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06808-L21
Intel Xeon-Silver 4210 (2.2GHz/10-core/85W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06807-L21
Intel Xeon-Silver 4208 (2.1GHz/8-core/85W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06806-L21

Intel Xeon-Bronze Processor

Intel Xeon-Bronze 3204 (1.9GHz/6-core/85W) FIO Processor Kit for HPE ProLiant BL460c Gen10.	P06805-L21

Notes:

Configuration Information

- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

- Supports 1 or 2 processors. Mixing of different processor models or generations is not supported.

- The Intel® Xeon® Scalable Family Processors come with model numbers to indicate SKU level, processor generation, SKU model, integrations-optimizations or memory capacity. (ie. HPE BL460c Gen10 Gen10 Intel Xeon-Gold 6230; 6 is the SKU Level, 2 is the processor generation, 30 is the SKU model, m indicates memory sku)

- Platinum - 8200 Series - 2S - 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2933 MT/s, supporting up to 1TB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology supported. Intel AVX-512 (2x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, Node Controller Support, Advanced RAS supported.

- Gold - 6200 Series - 2S - 2UPI @ 9.6 or 10.4GT/s(processor dependent), 6-Channel DDR4 @ 2933MHz (processor dependent), supporting up to 1TB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512 (2x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, Node Controller Support, Advanced RAS supported.

- Gold - 5200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2666MHz (SKU 5222=supports 2933), supporting up to 1TB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA) (SKU 5222 supports 2x 512 bit FMA), VNNI, 48 lanes PCIe 3.0, Advanced RAS supported.

- Silver - 4200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 9.6 GT/s, 6-Channel DDR4 @ 2666 MHz supporting up to 1TB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, standard RAS supported.

- Bronze - 3200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 9.6 GT/s, 6-Channel DDR4 @ 2133MHz supporting up to 1TB memory capacity. Intel AVX-512(1x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, standard RAS supported.

- The BL460c Gen10 includes two I/O mezzanine expansion slots. A processor must be installed in processor slot 1 for access to the first mezzanine expansion slot (expansion slot 1). A processor must be installed in processor slot 2 for access to the second mezzanine expansion slot (expansion slot 2).

HPE Processors - Intel Scalable Family Processors - Generation 1 (x1xxa Models)

Notes:

- All configure-to-order processor kits (i.e. xxxxxx-L21) contain one (1) processor.

- If two processors are desired, select one xxxxxx-L21 here in Step 2 and the corresponding xxxxxx-B21 for the same processer model in Step 4.

Intel Xeon-Gold Processors

Intel Xeon-Gold 5115 (2.4GHz/10-core/85W) FIO Processor Kit for HPE ProLiant BL460c Gen10	872013-L21
Intel Xeon-Gold 6148 (2.4GHz/20-core/145W) FIO Processor Kit for HPE ProLiant BL460c Gen10	875950-L21

Configuration Information

Intel Xeon-Bronze Processor

Intel Xeon-Bronze 3104 (1.7GHz/6-core/85W) FIO Processor Kit for HPE ProLiant BL460c Gen10	872006-L21

Notes:

- When using processors of 135W or greater, 10 fans are required in the c7000 for optimal performance.
- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
- Supports 1 or 2 processors. Mixing different processor models is not supported.
- For the Intel® C621 Chipset Scalable Family Processors come with model numbers to indicate SKU level, processor generation, SKU model, integrations-optimizations or memory capacity. (ie. HPE BL460c Gen10 Gen10 Intel Xeon-Gold 6134M; 6 is the SKU Level, 1 is the processor generation, 34 is the SKU model, m indicates memory sku)
- The letter "M" following the model number indicates higher maximum memory support up to 1.5TB per processor.
- Platinum - 8100 Series - 2S - 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2666 MT/s, 768 GB memory capacity (1.5 TB on select skus), Intel Turbo Boost Technology, Intel Hyper-Threading Technology
- Intel AVX-512 (2x 512-bit FMA), 48 lanes PCIe 3.0, advanced RAS.
- Gold - 5100, 6100 Series - 2S - 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2400 MHz (SKU 5122=supports 2666), 768 GB memory capacity (1.5 TB on select skus), Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA) (SKU 5122 supports 2x 512 bit FMA), 48 lanes PCIe 3.0, advanced RAS.
- Silver - 4100 Series - 2S - 2UPI @ 9.6 GT/s, 6-Channel DDR4 @ 2400 MHz, 768 GB memory capacity, Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS.
- The BL460c Gen10 includes two I/O mezzanine expansion slots. A processor must be installed in processor slot 1 for access to the first mezzanine expansion slot (expansion slot 1). A processor must be installed in processor slot 2 for access to the second mezzanine expansion slot (expansion slot 2).

HPE SmartMemory

The following memory supports Intel® Xeon® Scalable processor family 2nd generation

HPE 8GB (1x8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00918-B21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00920-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00922-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00924-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00930-B21
HPE 64GB (1x64GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P00926-B21

Configuration Information

HPE 128GB (1x128GB) Octal Rank x4 DDR4-2933 CAS-24-21-21 Load Reduced 3DS Smart Memory Kit	P00928-B21

Notes:

- HPE memory from previous generation servers/PROCESSORS(Gen1) is not supported with this server/processor combination. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen10.
- LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.
- 128GB DIMMs cannot be mixed with other DIMM capacities within the server
- Depending on the memory configuration and processor model, the memory speed may run at 2933 Mt/s, 2666MT/s, 2400MT/s, or 2133MT/s. Please see the Online Memory Configuration Tool at: **https://memoryconfigurator.hpe.com/ddr4memoryconfig/home/legal**

The following memory supports Intel® Xeon® Scalable processor family 1nd generation

HPE 8GB (1x8GB) Single Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815097-B21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815098-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	835955-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815100-B21
HPE 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 Load Reduced Smart Memory Kit	815101-B21
HPE 128GB (1x128GB) Octal Rank x4 DDR4-2666 CAS-22-19-19 3DS Load Reduced Memory Kit	815102-B21

Notes:

- HPE memory from previous generation servers is not supported with this server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen10.
- LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.
- 128GB DIMMs cannot be mixed with other DIMM capacities within the server
- Depending on the memory configuration and processor model, the memory speed may run at 2666MT/s, 2400MT/s, or 2133MT/s. Please see the Online Memory Configuration Tool at: **https://memoryconfigurator.hpe.com/ddr4memoryconfig/home/legal**

HPE Networking

FlexibleLOM Adapters

Notes: The server requires one (1) FlexibleLOM that is installed in the FlexibleLOM connectors. All FlexibleLOMs are dual port: One port is routed to interconnect module bay 1 and the other to bay 2.

20Gb FlexibleLOM Adapters

HPE FlexFabric 20Gb 2-port 630M Adapter	700076-B21
HPE FlexFabric 20Gb 2-port 630FLB Adapter	700065-B21
HPE FlexFabric 20Gb 2-port 650M Adapter	700767-B21

Configuration Information

HPE FlexFabric 20Gb 2-port 650FLB Adapter	700763-B21

10Gb FlexibleLOM Adapters

HPE FlexFabric 10Gb 2-port 534M Adapter	700748-B21
HPE FlexFabric 10Gb 2-port 536FLB Adapter	766490-B21
HPE Ethernet 10Gb 2-port 560M Adapter	665246-B21
HPE Ethernet 10Gb 2-port 560FLB Adapter	655639-B21

HPE Storage Controllers

HPE FIO Enable Smart Array SW RAID	784308-B21

Notes: The HPE Smart Array S100i SR Controller (chipset SATA) comes standard with the HPE BL460c Gen10 10Gb/20Gb FLB CTO Blade. If the HPE Smart Array P204i-b controllers is not chosen, a SATA cable will be provided to support SATA devices for the two internal drive bays. If RAID is required when using the S100i, please choose 'HPE FIO Enable Smart Array S100i SR Setting' (784308-B21).

HPE Smart Array P204i-b SR Gen10 (4 Internal Lanes/1GB Cache) 12G SAS Modular Controller	804367-B21
HPE Smart Array P408e-m SR Gen10 (8 External Lanes/2GB Cache) 12G SAS Mezzanine Controller	804381-B21

Step 3: Choose Additional Factory Integration Options

HPE Unique Options

HPE Special Enablement Kits	873870-B21
HPE Special Enablement Kits	873373-B21

Notes: The HPE Gen10 NVMe FIO Setting (873373-B21) is required to support SFF NVMe SSDs within the system. This option is not compatible with the HPE Smart Array P204i-b,. Hewlett Packard Enterprise recommends the use of a dual M.2 solid state drive enablement kit (873870-B21) together with M.2 SSD media for boot when using this option.

HPE Legacy FIO Mode Setting	758959-B22

Notes: Changes default UEFI BIOS setting into Legacy BIOS setting. (758959-B22) is not supported with HPE Dual 8GB microSD EM USB Kit (741279-B21) nor with HPE FIO Enable Smart Array S100i SR Setting (784308-B21). Must select HPE Gen10 TPM 1.2 FIO if this is selected.

HPE Smart Memory Fast Fault Tolerance FIO Setting	875293-B21

Notes: Enables Double Device Data Correct (DDDC) with significantly higher performance.

HPE Gen10 TPM 1.2 FIO Setting	872108-B21

Notes: Can only be selected with TPM 2.0 Gen10 Kit (864279-B21)

Converged Infrastructure Management Software

HPE OneView with iLO Advanced - Server hardware required on same purchase order

HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView for Blade Server including 3yr 24x7 Support FIO Bundle Physical 1-server LTU	F6Q89A

Step 4: Choose Additional Options for Factory Integration

Configuration Information

For additional options, please refer to the "Core Options" and "Additional Options" section below. For additional options, including server blade enclosures interconnect, mezzanine options and power subsystem options; please see the Core Options and Additional sections below; or the following:

- HPE BladeSystem c3000 Enclosure QuickSpecs:
  https://www.hpe.com/h20195/v2/GetPDF.aspx/c04128340.pdf
  Notes: The c3000 HPE c-Class enclosures have full backwards and forwards compatibility, existing server blades are supported in the new enclosures and any future server blades will be supported in the existing enclosures.
- HPE BladeSystem c7000 Enclosure QuickSpecs:
  https://www.hpe.com/h20195/v2/GetPDF.aspx/c04128339.pdf
  Notes: The c7000 HPE c-Class enclosures have full backwards and forwards compatibility, existing server blades are supported in the new enclosures and any future server blades will be supported in the existing enclosures.
- HPE BladeSystem c-Class Interconnect and Mezzanine Components:
  https://www.hpe.com/us/en/integrated-systems/bladesystem.html#portfolio

Notes: For optimal cooling and system performance the BL460c Gen10 Server Blade requires the c7000 enclosure to be configured with 10 fans and the c3000 enclosure to be configured with 6 fans.

Core Options

HPE Networking

Notes:

– A 10 Gigabit Ethernet adapter supports linking at 1Gbps or 10Gbps when connected to an interconnect module with 10Gb Ethernet downlinks.

– A 10 Gigabit Ethernet adapter supports linking at only 1Gbps when connected to an interconnect module with 1Gb Ethernet downlinks.

– The 10 Gigabit Ethernet adapters on each server blade connect to a 10Gb interconnect in bays 3-6 (HPE BladeSystem c7000 Enclosure) or bays 2-4 (HPE BladeSystem c3000 Enclosure).

20 Gigabit Ethernet Mezzanine Cards

HPE FlexFabric 20Gb 2-port 630M Adapter 700076-B21

Notes: Please see QuickSpecs for technical specifications and additional information at **https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04312720**

HPE FlexFabric 20Gb 2-port 650M Adapter 700767-B21

Notes: Please see QuickSpecs for technical specifications and additional information at **https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04347342**

10 Gigabit Ethernet Mezzanine Cards

HPE FlexFabric 10Gb 2-port 534M Adapter 700748-B21

Notes: Please see QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/us/en/product-catalog/servers/server-adapters.html**

HPE Ethernet 10Gb 2-port 560M Adapter 665246-B21

Notes: Please see QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/h20195/v2/GetPDF.aspx/c04111406.pdf**

FlexibleLOM Adapters

Notes: The server supports one (1) FlexibleLOM that is installed in the FlexibleLOM connectors and is already included in the pre-configured models. However, it must be added in Step 2 for Configure-to-Order Models. The FlexibleLOM options below are used to change these original FlexibleLOMs.

20Gb FlexibleLOM Adapters

HPE FlexFabric 20Gb 2-port 630FLB Adapter 700065-B21

Notes: Please see QuickSpecs for technical specifications and additional information at **https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04312719**

HPE FlexFabric 20Gb 2-port 650FLB Adapter 700763-B21

Notes: Please see QuickSpecs for technical specifications and additional information at **https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04347341**

Notes: Please see QuickSpecs for technical specifications and additional information at **https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04347246**

HPE Ethernet 10Gb 2-port 560FLB Adapter 655639-B21

Notes: Please see QuickSpecs for technical specifications and additional information at **https://www.hpe.com/h20195/v2/GetPDF.aspx/c04111516.pdf**

Core Options

HPE Infiniband Mezzanine Adapters

HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter 764283-B21

Notes:

– When an InfiniBand adapter is installed in mezzanine slot 1, only one port is active (regardless of operating mode). When installed in mezzanine slot 2, both ports are active.

– The FDR InfiniBand adapter must be installed in mezzanine slot 1 for FDR mode and may be installed in either mezzanine slot if operated in any other mode.

10Gb FlexibleLOM Adapters

HPE FlexFabric 10Gb 2-port 536FLB Adapter 766490-B21

HPE Fibre Channel

HPE LPe1605 16Gb Fibre Channel HBA for BladeSystem c-Class 718203-B21

Notes: Please see QuickSpecs for technical specifications and additional information at **https://h20195.www2.hpe.com/v2/getpdf.aspx/c04315132.pdf**

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter 710608-B21

Notes: Please see QuickSpecs for technical specifications and additional information at **https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-c03924409**

HPE Processors

Choose Required Options (one of the following from each list unless otherwise noted)

HPE Synergy Gen10 products now support two generations of processors. As noted above in Step 1, you select the CTO Model for which generation processor you would like. In this step are the lists for Generation 2 and 1 processors you have available.

Intel Scalable Family Processors - Generation 2 (x2xx Models)

Notes:

– All configure-to-order processor kits (i.e. xxxxxx-L21) contain one (1) processor.

– If two processors are desired, select one xxxxxx-L21 here in Step 2 and the corresponding xxxxxx-B21 for the same processer model in Step 4.

Intel Xeon-Platinum Processors

Intel Xeon-Platinum 8256 (3.8GHz/4-core/105W) Processor Kit for HPE ProLiant BL460c Gen10 P11877-B21

Intel Xeon-Platinum 8253 (2.2GHz/16-core/125W) Processor Kit for HPE ProLiant BL460c Gen10 P11876-B21

Intel Xeon-Gold Processors

Intel Xeon-Gold 6262V (1.9GHz/24-core/135W) Processor Kit for HPE ProLiant BL460c Gen10 P11875-B21

Core Options

HPE BL460c Gen10 Intel Xeon-Gold 6252 (2.1GHz/24-core/150W) Processor Kit	P06821-B21
Intel Xeon-Gold 6248 (2.5GHz/20-core/150W) Processor Kit for HPE ProLiant BL460c Gen10	P06820-B21
Intel Xeon-Gold 6242 (2.8GHz/16-core/150W) Processor Kit for HPE ProLiant BL460c Gen10	P06819-B21
Intel Xeon-Gold 6240Y (2.6GHz/18-14-8-core/150W) Processor Kit for HPE ProLiant BL460c Gen10	P06967-B21
Intel Xeon-Gold 6240 (2.6GHz/18-core/150W) Processor Kit for HPE ProLiant BL460c Gen10	P06818-B21
Intel Xeon-Gold 6238 (2.1GHz/22-core/140W) Processor Kit for HPE ProLiant BL460c Gen10	P11873-B21
Intel Xeon-Gold 6230 (2.1GHz/20-core/125W) Processor Kit for HPE ProLiant BL460c Gen10	P06817-B21
Intel Xeon-Gold 6222V (1.8GHz/20-core/115W) Processor Kit for HPE ProLiant BL460c Gen10	P11869-B21
Intel Xeon-Gold 6226 (2.7GHz/12-core/125W) Processor Kit for HPE ProLiant BL460c Gen10	P11870-B21
Intel Xeon-Gold 5222 (3.8GHz/4-core/105W) Processor Kit for HPE ProLiant BL460c Gen10	P11865-B21
Intel Xeon-Gold 5220S (2.7GHz/18-core/125W) Processor Kit for HPE ProLiant BL460c Gen10	P11864-B21
Intel Xeon-Gold 5220 (2.2GHz/18-core/125W) Processor Kit for HPE ProLiant BL460c Gen10	P06816-B21
Intel Xeon-Gold 5218 (2.3GHz/16-core/125W) Processor Kit for HPE ProLiant BL460c Gen10	P06815-B21
Intel Xeon-Gold 5218B (2.3GHz/16-core/125W) Processor Kit for HPE ProLiant BL460c Gen10	P11862-B21
Intel Xeon-Gold 5217 (3.0GHz/8-core/115W) Processor Kit for HPE ProLiant BL460c Gen10	P06813-B21
Intel Xeon-Gold 5215 (2.5GHz/10-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	P06811-B21

Intel Xeon-Silver Processors

Intel Xeon-Silver 4216 (2.1GHz/16-core/100W) Processor Kit for HPE ProLiant BL460c Gen10	P06810-B21
Intel Xeon-Silver 4215 (2.5GHz/8-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	P06809-B21
Intel Xeon-Silver 4214 (2.2GHz/12-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	P06808-B21
Intel Xeon-Silver 4214Y (2.2GHz/12-10-8-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	P06966-B21
Intel Xeon-Silver 4210 (2.2GHz/10-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	P06807-B21
Intel Xeon-Silver 4208 (2.1GHz/8-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	P06806-B21

Intel Xeon-Bronze Processor

Intel Xeon-Bronze 3204 (1.9GHz/6-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	P06805-B21

Notes:

- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

- Supports 1 or 2 processors. Mixing of different processor models or generations is not supported.

- The Intel® Xeon® Scalable Family Processors come with model numbers to indicate SKU level, processor generation, SKU model, integrations-optimizations or memory capacity. (ie. HPE BL460c Gen10 Gen10 Intel Xeon-Gold 4214Y; 4 is the SKU Level, 2 is the processor generation, 14 is the SKU model, Y indicates Speed Select SKU)

- Platinum - 8200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2933 MT/s supporting up to 1TB memory capacity. Intel Turbo Boost

Core Options

Technology, Intel Hyper-Threading Technology supported. Intel AVX-512 (2x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, Node Controller Support, Advanced RAS supported.

- Gold -6200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2933 supporting up to 1TB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512 (2x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, Node Controller Support, Advanced RAS supported.

- Gold - 5200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2666MHz (SKU 5222=supports 2933), supporting up to 1TB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA) (SKU 5222 supports 2x 512 bit FMA), VNNI, 48 lanes PCIe 3.0, Advanced RAS supported.

- Silver - 4200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 9.6 GT/s, 6-Channel DDR4 @ 2666 MHz supporting up to 1TB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, standard RAS supported.

- Bronze - 3200 Series - Supports 2 socket (BL460c Gen10) compute module, 2 Socket supports 2UPI @ 9.6 GT/s, 6-Channel DDR4 @ 2133MHz supporting up to 1TB memory capacity. Intel AVX-512(1x 512-bit FMA), VNNI, 48 lanes PCIe 3.0, standard RAS supported.

- The BL460c Gen10 includes two I/O mezzanine expansion slots. A processor must be installed in processor slot 1 for access to the first mezzanine expansion slot (expansion slot 1). A processor must be installed in processor slot 2 for access to the second mezzanine expansion slot (expansion slot 2).

Intel Scalable Family Processors - Generation 1

Intel Xeon-Platinum Processors

Intel Xeon-Platinum 8160 (2.1GHz/24-core/145W) Processor Kit for HPE ProLiant BL460c Gen10	875957-B21
Intel Xeon-Platinum 8164 (2.0GHz/26-core/150W) Processor Kit for HPE ProLiant BL460c Gen10	875958-B21
Intel Xeon-Platinum 8158 (3.0GHz/12-core/105W) Processor Kit for HPE ProLiant BL460c Gen10	875956-B21

Intel Xeon-Platinum Processors

Intel Xeon-Platinum 8153 (2.0GHz/16-core/125W) Processor Kit for HPE ProLiant BL460c Gen10	875954-B21

Intel Xeon-Gold Processors

Intel Xeon-Gold 5115 (2.4GHz/10-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	872013-B21
Intel Xeon-Gold 5118 (2.3GHz/12-core/105W) Processor Kit for HPE ProLiant BL460c Gen10	872014-B21
Intel Xeon-Gold 5120 (2.2GHz/14-core/105W) Processor Kit for HPE ProLiant BL460c Gen10	872015-B21
Intel Xeon-Gold 5122 (3.6GHz/4-core/105W) Processor Kit for HPE ProLiant BL460c Gen10	875939-B21
Intel Xeon-Gold 6126 (2.6GHz/12-core/120W) Processor Kit for HPE ProLiant BL460c Gen10	875940-B21
Intel Xeon-Gold 6128 (3.4GHz/6-core/115W) Processor Kit for HPE ProLiant BL460c Gen10	875941-B21
Intel Xeon-Gold 6130 (2.1GHz/16-core/120W) Processor Kit for HPE ProLiant BL460c Gen10	875942-B21
Intel Xeon-Gold 6132 (2.6GHz/14-core/140W) Processor Kit for HPE ProLiant BL460c Gen10	875943-B21

Core Options

Intel Xeon-Gold 6134 (3.2GHz/8-core/130W) Processor Kit for HPE ProLiant BL460c Gen10	875944-B21
Intel Xeon-Gold 6136 (3.0GHz/12-core/150W) Processor Kit for HPE ProLiant BL460c Gen10	875945-B21
Intel Xeon-Gold 6138 (2.0GHz/20-core/120W) Processor Kit for HPE ProLiant BL460c Gen10	875946-B21
Intel Xeon-Gold 6140 (2.3GHz/18-core/140W) Processor Kit for HPE ProLiant BL460c Gen10	875947-B21
Intel Xeon-Gold 6142 (2.6GHz/16-core/145W) Processor Kit for HPE ProLiant BL460c Gen10	875948-B21
Intel Xeon-Gold 6148 (2.4GHz/20-core/145W) Processor Kit for HPE ProLiant BL460c Gen10	875950-B21
Intel Xeon-Gold 6152 (2.1GHz/22-core/135W) Processor Kit for HPE ProLiant BL460c Gen10	875951-B21

Intel Xeon-Silver Processors

Intel Xeon-Silver 4110 (2.1GHz/8-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	872012-B21
Intel Xeon-Silver 4112 (2.6GHz/4-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	872009-B21
Intel Xeon-Silver 4114 (2.2GHz/10-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	872010-B21
Intel Xeon-Silver 4116 (2.1GHz/12-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	872011-B21

Intel Xeon-Bronze Processor

Intel Xeon-Bronze 3104 (1.7GHz/6-core/85W) Processor Kit for HPE ProLiant BL460c Gen10	872006-B21

Notes:

- When using processors of 135W or greater, 10 fans are required in the c7000 for optimal performance.
- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
- Supports 1 or 2 processors. Mixing different processor models is not supported.
- For the Intel® C621 Chipset Scalable Family Processors come with model numbers to indicate SKU level, processor generation, SKU model, integrations-optimizations or memory capacity. (ie. HPE BL460c Gen10 Gen10 Intel Xeon-Gold 6134M; 6 is the SKU Level, 1 is the processor generation, 34 is the SKU model, m indicates memory sku)
- The letter "M" following the model number indicates higher maximum memory support up to 1.5TB per processor.
- Platinum - 8100 Series - 2S - 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2666 MT/s, 768 GB memory capacity (1.5 TB on select skus), Intel Turbo Boost Technology, Intel Hyper-Threading Technology
- Intel AVX-512 (2x 512-bit FMA), 48 lanes PCIe 3.0, advanced RAS.
- Gold - 5100, 6100 Series - 2S - 2UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2400 MHz (SKU 5122=supports 2666), 768 GB memory capacity (1.5 TB on select skus), Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA) (SKU 5122 supports 2x 512 bit FMA), 48 lanes PCIe 3.0, advanced RAS.
- Silver - 4100 Series - 2S - 2UPI @ 9.6 GT/s, 6-Channel DDR4 @ 2400 MHz, 768 GB memory capacity, Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS.
- The BL460c Gen10 includes two I/O mezzanine expansion slots. A processor must be installed in processor slot 1 for access to the first mezzanine expansion slot (expansion slot 1). A processor must be installed in processor slot 2 for access to the second mezzanine expansion slot (expansion slot 2).

HPE Drives

Notes:

– The ProLiant BL460c Gen10 server includes the HPE hot-plug small form factor (SFF) SmartDrive carrier for enhanced management and reduced maintenance errors. HPE drives from generation G7 servers and before are not compatible with the BL460c Gen10 drive bays.

– The mixing of standard SAS drives with SAS SSD is supported within the server, but limits the RAID configuration to two separate RAID 0 volumes. Mixing of other drives types is not supported.

– HPE hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

– The hard drive options are not required when configuring a drive-less model.

HPE Solid State M.2 SATA Drives

HPE Solid State M.2 drives for installation internal to server blade

Notes:

– The solid state M.2 drives require the selection of HPE BL460c Gen10 M.2 FIO Enablement Kit (873870-B21).

– M.2 drives cannot be mixed with other sizes and capacities within the system.

– RAID 1, 0, and 5 are provided through the S100i in UEFI BIOS mode only.

HPE Special Enablement Kits	873870-B21

HPE Solid State M.2 drives for installation internal to server blade

HPE 240GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875488-B21
HPE 480GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875490-B21
HPE 960GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875492-B21
HPE 960GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875500-B21

HPE uFF (2.5-inch) Solid State Drives

HPE Dual 240GB SATA 6G Mixed Use M.2 - UFF to SFF SCM 3yr Wty Digitally Signed Firmware SSD	P06607-B21

HPE NVMe PCIe Read Intensive SFF (2.5-inch) Solid State Drives

HPE 960GB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07190-B21
HPE 1.92TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07192-B21
HPE 3.84TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07194-B21
HPE 7.68TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07196-B21

Core Options

HPE 15.36TB NVMe Gen3 High Performance Read Intensive SFF SCN U.2 CM5 SSD	P07198-B21
HPE 2TB NVMe Gen3 High Performance Read Intensive SFF SCN U.2 P4510 SSD	P13695-B21
HPE 4TB NVMe Gen3 High Performance Read Intensive SFF SCN U.2 P4510 SSD	P13697-B21
HPE 7.68TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10218-B21
HPE 3.84TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10216-B21
HPE 1.92TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10214-B21
HPE 960GB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10208-B21
HPE 1.92TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10210-B21
HPE 3.84TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10212-B21
HPE 1.92TB NVMe Gen3 Mainstream Performance Read Intensive SFF SCN U.2 PE6011 SSD	P13678-B21
HPE 3.84TB NVMe Gen3 Mainstream Performance Read Intensive SFF SCN U.2 PE6011 SSD	P13680-B21
HPE 7.68TB NVMe Gen3 Mainstream Performance Read Intensive SFF SCN U.2 PE6011 SSD	P13682-B21
HPE 960GB NVMe Gen3 Mainstream Performance Read Intensive SFF SCN U.2 PE6011 SSD	P13676-B21
HPE 960GB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 CM6 SSD	P20015-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 CM6 SSD	P20017-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 CM6 SSD	P20019-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 CM6 SSD	P20021-B21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20139-B21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20141-B21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20143-B21
HPE 15.36TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20145-B21
HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P25944-B21
HPE 960GB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 PM1733 SSD	P22331-B21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20139-B21

HPE NVMe PCIe Mixed Use SFF (2.5-inch) Solid State Drives

HPE 1.6TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10222-B21
HPE 3.2TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10224-B21
HPE 6.4TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10226-B21
HPE 800GB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07179-B21
HPE 1.6TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07181-B21

Core Options

HPE 3.2TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07183-B21
HPE 6.4TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07185-B21
HPE 1.6TB NVMe Gen3 High Performance Mixed Use SFF SCN U.2 P4610 SSD	P13699-B21
HPE 3.2TB NVMe Gen3 High Performance Mixed Use SFF SCN U.2 P4610 SSD	P13701-B21
HPE 6.4TB NVMe Gen3 High Performance Mixed Use SFF SCN U.2 P4610 SSD	P13703-B21
HPE 800GB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07179-B21
HPE 1.6TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07181-B21
HPE 3.2TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07183-B21
HPE 6.4TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07185-B21
HPE 1.6TB NVMe Gen3 High Performance Mixed Use SFF SCN U.2 P4610 SSD	P13699-B21
HPE 3.2TB NVMe Gen3 High Performance Mixed Use SFF SCN U.2 P4610 SSD	P13701-B21
HPE 6.4TB NVMe Gen3 High Performance Mixed Use SFF SCN U.2 P4610 SSD	P13703-B21
HPE 800GB NVMe Gen3 Mainstream Performance Mixed Use SFF SCN U.2 PE6031 SSD	P13668-B21
HPE 1.6TB NVMe Gen3 Mainstream Performance Mixed Use SFF SCN U.2 PE6031 SSD	P13670-B21
HPE 6.4TB NVMe Gen3 Mainstream Performance Mixed Use SFF SCN U.2 PE6031 SSD	P13674-B21
HPE 3.2TB NVMe Gen3 Mainstream Performance Mixed Use SFF SCN U.2 PE6031 SSD	P13672-B21
HPE 800GB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20094-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20096-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20098-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20100-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20203-B21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P20205-B21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P20207-B21
HPE 12.8TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P20209-B21
HPE 800GB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P25953-B21

HPE NVMe PCIe Write Intensive SFF (2.5-inch) Solid State Drives

HPE 375GB NVMe Gen3 High Performance Low Latency Write Intensive SFF SCN U.2 P4800X SSD	878014-B21
HPE 750GB NVMe Gen3 High Performance Low Latency Write Intensive SFF SCN U.2 P4800X SSD	P06952-B21

SATA 6G Read Intensive Hot Plug SmartDrive SFF (2.5-inch) SSD Drives

HPE 240GB SATA 6G Read Intensive SFF SC PM883 SSD	P04556-B21
HPE 480GB SATA 6G Read Intensive SFF SC PM883 SSD	P04560-B21
HPE 960GB SATA 6G Read Intensive SFF SC PM883 SSD	P04564-B21
HPE 1.92TB SATA 6G Read Intensive SFF SC PM883 SSD	P04566-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875503-B21

Core Options

HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04476-B21
HPE 960GB SATA 6G Read Intensive SFF SC SE4011 SSD	P06196-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04478-B21
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04480-B21
HPE 7.68TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04482-B21
HPE 1.92TB SATA 6G Read Intensive SFF SC SE4011 SSD	P06198-B21
HPE 3.84TB SATA 6G Read Intensive SFF SC SE4011 SSD	P06200-B21
HPE 3.84TB SATA 6G Read Intensive SFF SC PM883 SSD	P04570-B21
HPE 480GB SATA 6G Read Intensive SFF SC SE4011 SSD	P06194-B21
HPE 480GB SATA 6G Read Intensive SFF SC SE4011 SSD	P06194-B21
HPE 240GB SATA 6G Read Intensive SFF SC S4510 SSD	P05924-B21
HPE 480GB SATA 6G Read Intensive SFF SC S4510 SSD	P05928-B21
HPE 960GB SATA 6G Read Intensive SFF SC S4510 SSD	P05932-B21
HPE 1.92TB SATA 6G Read Intensive SFF SC S4510 SSD	P05938-B21
HPE 3.84TB SATA 6G Read Intensive SFF SC S4510 SSD	P05946-B21

SATA Mixed Use SFF (2.5-inch) SC SSD

HPE 480GB SATA 6G Mixed Use SFF SC SM883 SSD	P09712-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07922-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07926-B21
HPE 960GB SATA 6G Mixed Use SFF SC SM883 SSD	P09716-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07930-B21
HPE 1.92TB SATA 6G Mixed Use SFF SC SM883 SSD	P09722-B21
HPE 3.84TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P00896-B21
HPE 480GB SATA 6G Mixed Use SFF SC S4610 SSD	P05976-B21
HPE 960GB SATA 6G Mixed Use SFF SC S4610 SSD	P05980-B21
HPE 1.92TB SATA 6G Mixed Use SFF SC S4610 SSD	P05986-B21
HPE 3.84TB SATA 6G Mixed Use SFF SC S4610 SSD	P05994-B21
HPE 480GB SATA 6G Mixed Use SFF SC SE5031 SSD	P13658-B21
HPE 960GB SATA 6G Mixed Use SFF SC SE5031 SSD	P13660-B21
HPE 1.92TB SATA 6G Mixed Use SFF SC SE5031 SSD	P13662-B21
HPE 3.84TB SATA 6G Mixed Use SFF RW SE5031 SSD	P13664-B21
HPE 3.84TB SATA 6G Mixed Use SFF SC SM883 SSD	P21517-B21

SAS Read Intensive SFF (2.5-inch) SC SSD

HPE 960GB SAS 12G Read Intensive SFF SC PM5 SSD	P04517-B21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06584-B21
HPE 1.92TB SAS 12G Read Intensive SFF SC PM5 SSD	P04519-B21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06586-B21

Core Options

HPE 3.84TB SAS 12G Read Intensive SFF SC PM5 SSD	P04521-B21
HPE 7.68TB SAS 12G Read Intensive SFF SC PM5 SSD	P04523-B21
HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06590-B21
HPE 15.3TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06592-B21
HPE 960GB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD	P10440-B21
HPE 1.92TB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD	P10442-B21
HPE 3.84TB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD	P10444-B21
HPE 7.68TB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD	P10446-B21
HPE 960GB SAS 12G Read Intensive SFF SC PM1643a SSD	P19903-B21
HPE 1.92TB SAS 12G Read Intensive SFF SC PM1643a SSD	P19905-B21
HPE 3.84TB SAS 12G Read Intensive SFF SC PM1643a SSD	P19907-B21
HPE 7.68TB SAS 12G Read Intensive SFF SC PM1643a SSD	P19909-B21
HPE 15.36TB SAS 12G Read Intensive SFF SC PM1643a SSD	P19911-B21
HPE 960GB SAS 12G Read Intensive SFF SC SS540 SSD	P21139-B21
HPE 1.92TB SAS 12G Read Intensive SFF SC SS540 SSD	P21141-B21
HPE 3.84TB SAS 12G Read Intensive SFF SC SS540 SSD	P21143-B21
HPE 7.68TB SAS 12G Read Intensive SFF SC SS540 SSD	P21145-B21
HPE 15.3TB SAS 12G Read Intensive SFF SC SS540 SSD	P21147-B21

12G SAS Enterprise/Midline SFF (2.5-inch) SC SSD

HPE 300GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870753-B21
HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870757-B21
HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870759-B21
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	832514-B21
HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765466-B21
HPE 2.4TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	881457-B21
HPE 1.8TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	872481-B21

SATA 6G Midline (2.5-inch) Hard Drives

HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	655710-B21
HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765455-B21

SAS 12G Mixed Use SFF (2.5-inch) SC SSD

HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04525-B21
HPE 800GB SAS 12G Mixed Use SFF SC PM5 SSD	P04527-B21
HPE 1.6TB SAS 12G Mixed Use SFF SC PM5 SSD	P04533-B21

Core Options

HPE 3.2TB SAS 12G Mixed Use SFF SC PM5 SSD	P04537-B21
HPE 6.4TB SAS 12G Mixed Use SFF SC PM5 SSD	P04539-B21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09088-B21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09090-B21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09092-B21
HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09094-B21
HPE 6.4TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09096-B21
HPE 960GB SAS 12G Mixed Use SFF SC Value SAS RM5 SSD	P10448-B21
HPE 1.92TB SAS 12G Mixed Use SFF SC Value SAS RM5 SSD	P10454-B21
HPE 3.84TB SAS 12G Mixed Use SFF SC Value SAS RM5 SSD	P10460-B21
HPE 800GB SAS 12G Mixed Use SFF SC PM1645a SSD	P19913-B21
HPE 1.6TB SAS 12G Mixed Use SFF SC PM1645a SSD	P19915-B21
HPE 3.2TB SAS 12G Mixed Use SFF SC PM1645a SSD	P19917-B21
HPE 6.4TB SAS 12G Mixed Use SFF SC PM1645a SSD	P19919-B21
HPE 800GB SAS 12G Mixed Use SFF SC SS540 SSD	P21131-B21
HPE 1.6TB SAS 12G Mixed Use SFF SC SS540 SSD	P21133-B21
HPE 3.2TB SAS 12G Mixed Use SFF SC SS540 SSD	P21135-B21
HPE 6.4TB SAS 12G Mixed Use SFF SC SS540 SSD	P21137-B21

12G SAS Write Intensive SFF (2.5-inch) SC SSD

HPE 400GB SAS 12G Write Intensive SFF SC PM5 SSD	P04541-B21
HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09098-B21
HPE 800GB SAS 12G Write Intensive SFF SC PM5 SSD	P04543-B21
HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09100-B21
HPE 1.6TB SAS 12G Write Intensive SFF SC PM5 SSD	P04545-B21
HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09102-B21
HPE 3.2TB SAS 12G Write Intensive SFF SC PM5 SSD	P04547-B21
HPE 400GB SAS 12G Write Intensive SFF SC SS540 SSD	P21125-B21
HPE 800GB SAS 12G Write Intensive SFF SC SS540 SSD	P21127-B21
HPE 1.6TB SAS 12G Write Intensive SFF SC SS540 SSD	P21129-B21
HPE 1.2TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872479-B21
HPE 600GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872477-B21
HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872475-B21

Notes: The mixing of standard SAS drives with SAS SSD is supported within the server, but limits the RAID configuration to two separate RAID 0 volumes. Mixing of other drives types is not supported

6G SATA Multi Vendor SSD

HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18424-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18432-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18420-B21
HPE 7.68TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor	P18430-B21

Core Options

HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18434-B21
HPE 3.84TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18438-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18436-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18422-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18426-B21
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18428-B21

Additional Options

HPE iLO Advanced License

HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features	512485-B21
HPE iLO Advanced Flexible Quantity License with 1yr Support on iLO Licensed Features	512486-B21
HPE iLO Advanced AKA Tracking License with 1yr Support on iLO Licensed Features	512487-B21
HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features	BD505A
HPE iLO Advanced Flexible Quantity License with 3yr Support on iLO Licensed Features	BD506A
HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features	E6U64ABE
HPE iLO Advanced AKA Tracking License with 3yr Support on iLO Licensed Features	BD507A
HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features	E6U59ABE
HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features	E6U64ABE

Notes:

- Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one or three years of 24 x 7 HPE Software Technical Support Service.

- For additional license kits, including electronic delivery options, please see the iLO QuickSpecs at **https://www.hpe.com/us/en/servers/integrated-lights-out-ilo.html**

- Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one or three year of 24 x 7 HPE Software Technical Support Service.

Converged Infrastructure Management Software

HPE OneView

HPE OneView with iLO Advanced

HPE OneView including 3yr 24x7 Support Physical 1-server LTU	E5Y34A
HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView Physical Media Kit LTU	E5Y37A
HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU	P8B24A
HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE
HPE OneView w/o iLO including 3yr 24x7 Support 1-server FIO LTU	P8B31A

Notes: For additional license kits please see the QuickSpecs at **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04154343**

HPE Security

HPE Trusted Platform Module 2.0 Gen10 Option	864279-B21

Notes:

- The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008 R2 and 2012. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to

Additional Options

ensure that a server running Windows Server 2008 R2 and 2012 has not been tampered with while the system was offline.

– For more information about TPM, including a white paper, go to
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00019207en_us

– ProLiant OS pre-installed units will come with the partition required for TPM deployment.

– The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

HPE Storage Controllers

HPE Smart Array P204i-b SR Gen10 (4 Internal Lanes/1GB Cache) 12G SAS Modular Controller	804367-B21
HPE Smart Array P408e-m SR Gen10 (8 External Lanes/2GB Cache) 12G SAS Mezzanine Controller	804381-B21
HPE FIO Enable Smart Array SW RAID	784308-B21
HPE Special Enablement Kits	873373-B21

Notes:

– The HPE Gen10 NVMe FIO Setting (873373-B21) is required to support SFF NVMe SSDs within the system. This option is not compatible with the HPE Smart Array P204i-b,. Hewlett Packard Enterprise recommends the use of a dual M.2 solid state drive kit for boot when using this option.

– The HPE Smart Array S100i SR Controller (chipset SATA) comes standard with the HPE BL460c Gen10 10Gb/20Gb FLB CTO Blade. If the HPE Smart Array P204i-b controllers is not chosen, a SATA cable will be provided to support SATA devices for the two internal drive bays. If RAID is required when using the S100i, please choose ‘HPE FIO Enable Smart Array S100i SR Setting’ (784308-B21).

HPE InfiniBand Mezzanine Adapters

HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter	764283-B21

Notes:

– InfiniBand FDR is the only speed supported on the HPE BL460c Gen10. For additional information, please see the HPE BladeSystem c7000 Enclosure and InfiniBand QuickSpecs at:

- **https://www.hpe.com/h20195/v2/GetPDF.aspx/c04128339.pdf**
- **https://www.hpe.com/h20195/v2/getpdf.aspx/c04126044.pdf?ver=26**

– The FDR InfiniBand adapter must be installed in mezzanine slot 1 for FDR mode and may be installed in any mezzanine slot if operated in any other mode.

– When an InfiniBand adapter is installed in mezzanine slot 1, only one port is active (regardless of operating mode). When installed in any other mezzanine slot, both ports are active.

Additional Options

HPE Flash Media Kits for USB Drives

HPE Enterprise Mainstream Flash Media Kits for Memory Cards

HPE 32GB microSD Flash Memory Card	700139-B21
HPE 8GB Dual microSD Flash USB Drive	741279-B21

HPE Pointnext operational services

Proactive Care Services

HPE 3 Year Proactive Care 24x7 ProLiant BL460c Gen10 Service	H7LT4E
HPE 3 Year Proactive Care 24x7 with DMR ProLiant BL460c Gen10 Service	H7LT5E
HPE 3 Year Proactive Care Advanced 24x7 ProLiant BL460c Gen10 Service	H7LT7E
HPE 3 Year Proactive Care Advanced 24x7 with DMR ProLiant BL460c Gen10 Service	H7LT8E

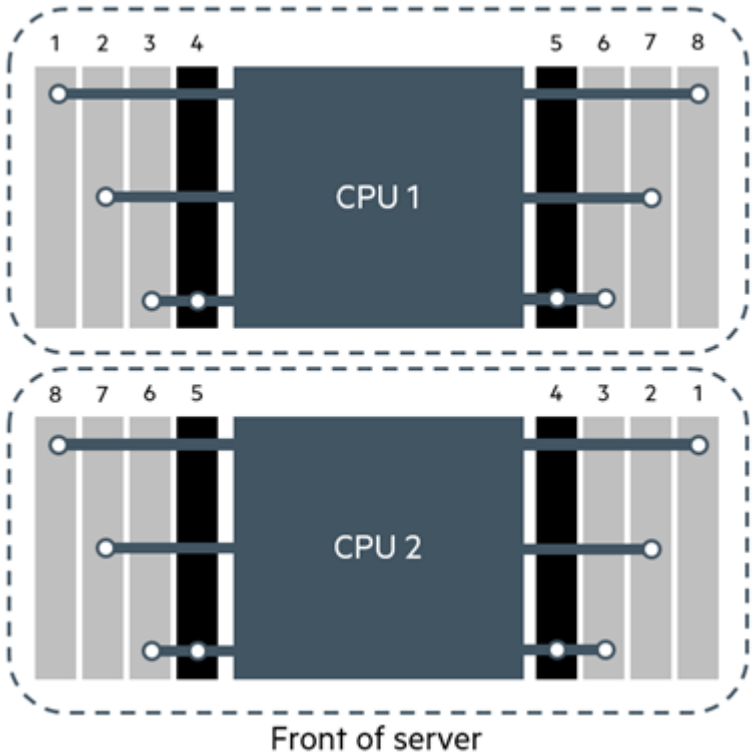
Installation Services

HPE Installation ProLiant Blade Server Service	UE493E

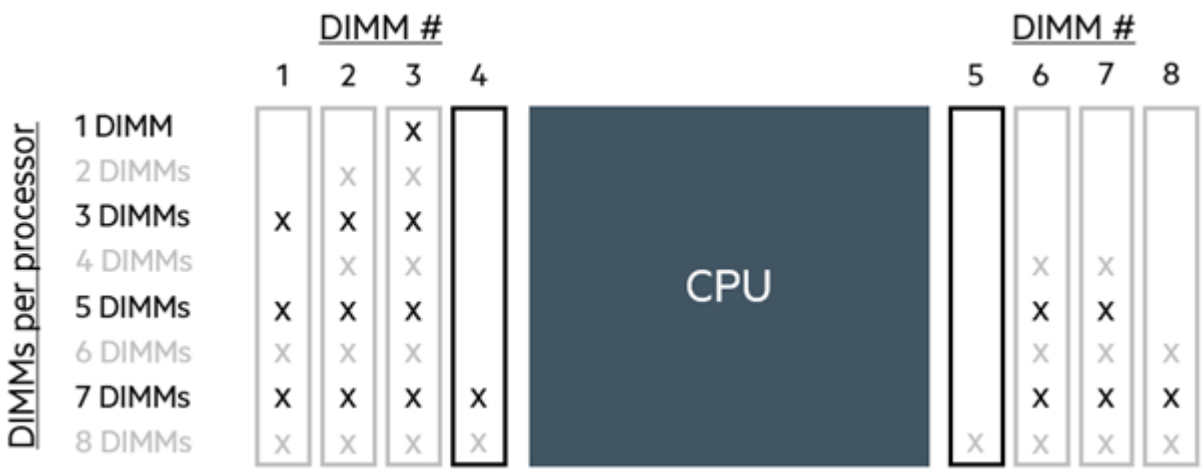
Notes: Additional HPE Pointnext operational services can be found at:
https://www.hpe.com/us/en/services/operational.html

Memory Subsystem Architecture

Each processor socket contains six memory channels that support one or two DIMMs each for a total of eight (8) DIMMs per installed processor or a grand total of sixteen (16) DIMMs for the server blade



BL460c Gen10 DIMM Channels and Numbering



8 DIMM per CPU Population Guidelines

Notes:

- Chart to be read from left to right. For example, when installing four (4) DIMMs on a processor, DIMMs 2, 3, 6, and 7 should be populated.
- For optimal performance, HPE does not recommend configurations with five (5) or seven (7) DIMMs in the BL460c Gen10 server blade.

Memory

– For more information or additional DIMM configurations go to: **http://www.hpe.com/docs/memory-population-rules**

Memory Population Rules and Guidelines

- A minimum of one DIMM is required per processor.
- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two processor system, only half of the DIMM slots are available.
- DIMM sizes can be mixed in channel. To maximize performance, it is recommended to balance the total memory capacity between all installed processors and to load the channels similarly whenever possible.
- LRDIMM and RDIMMs are all distinct memory technologies and cannot be mixed within a compute module.
- DIMMs of different speeds may be mixed in any order; the compute module will select a common optimal speed.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the memory type and number of installed processors.
- HPE memory from previous generation servers is not compatible with the HPE ProLiant BL460c Gen10 Server Blade.

To realize the performance memory capabilities listed in this document, HPE SmartMemory is required. For additional information, please see the HPE SmartMemory QuickSpecs at: : **http://www.hpe.com/docs/memory-population-rules**

BL460c Gen10 BladeSystem Server Memory

Memory Speed Table for Memory used with Intel Scalable Family Gen2 Processors					
Register DIMM (RDIMM)					
HPE SKU P/N	**P00918-B21**	**P00920-B21**	**P00922-B21**	**P00924-B21**	**P00930-B21**
SKU Description	HPE 8GB (1x8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	HPE 16GB (1x16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	HPE 16GB (1x16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	HPE 32GB (1x32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit
DIMM Rank ->	Single Rank (1R)	Single Rank (1R)	Dual Rank (2R)	Dual Rank (2R)	Dual Rank (2R)
DIMM Capacity ->	8GB	16GB	16GB	32GB	64GB
Voltage	1.2V	1.2V	1.2V	1.2V	1.2V
DRAM depth [bit]	1G	2G	1G	2G	4G
DRAM Width [bit]	x8	x4	x8	x4	x4
DRAM Density	8Gb	8Gb	8Gb	8Gb	16Gb
CAS Latency	21-21-21	21-21-21	21-21-21	21-21-21	21-21-21
DIMM Native Speed (MT/s)	2933	2933	2933	2933	2933
HPE Server Memory Speed (MT/s): Intel Xeon®Platinum/Gold 82xx/62xx Processors					

Memory

1 DIMM Per Channel	2933	2933	2933	2933	2933
2 DIMM Per Channel	2933	2933	2933	2933	2933
HPE Server Memory Speed (MT/s): Intel Xeon®Gold 52xx Processors					
1 DIMM Per Channel	2666	2666	2666	2666	2666
2 DIMM Per Channel	2666	2666	2666	2666	2666
HPE Server Memory Speed (MT/s): Intel Xeon®Silver 42xx Processors					
1 DIMM Per Channel	2400	2400	2400	2400	2400
2 DIMM Per Channel	2400	2400	2400	2400	2400
HPE Server Memory Speed (MT/s): Intel Xeon®Bronze 32xx Processors					
1 DIMM Per Channel	2133	2133	2133	2133	2133
2 DIMM Per Channel	2133	2133	2133	2133	2133

Memory Speed Table for Memory used with Intel Scalable Family Gen2 Processors			
Load Reduced (LRDIMM)			
HPE SKU P/N	**P00926-B21**	**P00928-B21**	**P11040-B21**
SKU Description	HPE 64GB 4Rx4 PC4-2933Y-L Smart Kit	HPE 128GB 8Rx4 PC4-2933Y-L 3DS Smart Kit	HPE 128GB 4Rx4 PC4-2933Y-L Smart Kit
DIMM Rank ->	Quad Rank (4R)	Octal Rank (8R)	Quad Rank (4R)
DIMM Capacity ->	64GB	128GB	128GB
Voltage	1.2V	1.2V	1.2V
DRAM depth [bit]	2G	2G	4G
DRAM Width [bit]	x4	x4	x4
DRAM Density	8Gb	8Gb	16Gb
CAS Latency	21-21-21	24-21-21	24-21-21
DIMM Native Speed (MT/s)	2933	2933	2933
Intel Xeon®Platinum/Gold 82xx/ 62xx Processors Officially Supported Memory Speed (MT/s)			
1 DIMM Per Channel	2933	2933	2933
2 DIMM Per Channel	2933	2933	2933
Intel Xeon®Gold 52xx Processors Officially Supported Memory Speed (MT/s)			
1 DIMM Per Channel	2666	2666	2666
2 DIMM Per Channel	2666	2666	2666
Intel Xeon®Silver 42xx Processors Officially Supported Memory Speed (MT/s)			
1 DIMM Per Channel	2400	2400	2400
2 DIMM Per Channel	2400	2400	2400
Intel Xeon®Bronze 32xx Processors Officially Supported Memory Speed (MT/s)			
1 DIMM Per Channel	2133	2133	2133
2 DIMM Per Channel	2133	2133	2133

Memory

Memory Speed Table for Memory used with Intel Scalable Family Gen1 Processors				
6DPC	**BL460c Gen10 Server Blade**			
DIMM Type	Register DIMM (RDIMM)			
HPE SKU P/N	815097-B21	815098-B21	835955-B21	815100-B21
SKU Description	HPE 8GB (1x8GB) Single Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit
DIMM Rank	Single Rank (1R)	Single Rank (1R)	Dual Rank (2R)	Dual Rank (2R)
DIMM Capacity	8GB	16GB	16GB	32GB
Voltage	1.2V	1.2V	1.2V	1.2V
DRAM depth [bit]	1G	2G	1G	2G
DRAM Width [bit]	x8	x4	x8	x4
DRAM Density	8Gb	8Gb	8Gb	8Gb
CAS Latency	19-19-19	19-19-19	19-19-19	19-19-19
DIMM Native Speed (MT/s)	2666	2666	2666	2666
HPE Server Memory Speed (MT/s) with Intel Xeon 8100 & 6100 Series Scalable Family Processors (Platinum) (also supported 5122)				
1 DIMM Per Channel	2666	2666	2666	2666
2 DIMM Per Channel	2666	2666	2666	2666
HPE Server Memory Speed (MT/s) with Intel Xeon 5100 & 4100 Series Scalable Family Processors (Silver/Gold) (except for 5122 processor above)				
1 DIMM Per Channel	2400	2400	2400	2400
2 DIMM Per Channel	2400	2400	2400	2400
HPE Server Memory Speed (MT/s) with Intel Xeon 3100 Series Scalable Family Processors (Bronze)				
1 DIMM Per Channel	2133	2133	2133	2133
2 DIMM Per Channel	2133	2133	2133	2133

Memory

Memory Speed Table for Memory used with Intel Scalable Family Gen1 Processors		
6DPC	**BL460c Gen10 Server Blade**	
DIMM Type	Load Reduced (LRDIMM)	
HPE SKU P/N	815101-B21	815102-B21
SKU Description	HPE 64GB 4Rx4 PC4-2400V-L	HPE 128GB 8Rx4 PC4-2666V-L
DIMM Rank	Quad Rank (4R)	Octal Rank (8R)
DIMM Capacity	64GB	128GB
Voltage	1.2V	1.2V
DRAM depth [bit]	2G	2G
DRAM Width [bit]	x4	
DRAM Density	8Gb	8Gb
CAS Latency	19-19-19	19-19-19
DIMM Native Speed (MT/s)	2666	2666
HPE Server Memory Speed (MT/s) with Intel Xeon 8100 & 6100 Series Scalable Family Processors (Gold/Platinum)		
1 DIMM Per Channel	2666	2666
2 DIMM Per Channel	2666	2666
HPE Server Memory Speed (MT/s) with Intel Xeon 5100 & 4100 Series Scalable Family Processors (Silver/Gold)		
1 DIMM Per Channel	2400	2400
2 DIMM Per Channel	2400	2400

Technical Specifications

Dimensions

(H x W x D) (with bezel)
7.11 x 2.18 x 20.37 in (18.07 x 5.54 x 51.76 cm)

Weight (approximate)

- **14.00 lb (6.33 kg)**
  Maximum: all processors, 16 DIMMs, hard drives, mezzanine cards, and two flash cache batteries installed)
- **10.50 lb (4.75 kg)**
  Minimum: one processor and 2 DIMMs installed

Power Specifications

For power specifications including input requirements, BTU rating, and power supply output, please see the:

- HPE BladeSystem c3000 Enclosure QuickSpecs at **https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04123379**
- HPE BladeSystem c7000 Enclosure QuickSpecs at **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04229580**

To review typical system power ratings use the HPE Power Advisor which is available via the online tool located at **https://paonline56.itcs.hpe.com**.
Notes: For optimal cooling and system performance the BL460c Gen10 Server Blade requires the c7000 enclosure to be configured with 10 fans and the c3000 enclosure to be configured with 6 fans.

System Inlet Temperature

Operating

- 10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1,000 ft) above sea level to a maximum of 3,050 m (10,000 ft), no direct sustained sunlight.
- Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed.
- System performance may be reduced if operating with a fan fault or above 30°C (86°F).

Non-operating

- -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).

Extended Ambient Operating Support

For Approved hardware configurations, the supported system inlet range is extended to be:

- 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft)

Notes: Qualifications for extended ambient configurations are detailed at:
http://h17007.www1.hpe.com/us/en/enterprise/servers/solutions/info-library/index.aspx?cat=extended_ambient_operating_support#.Wuyykk3rtaQ

Relative Humidity (non-condensing)

Technical Specifications

- **Operating**
  10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
- **Non-operating**
  5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

Altitude

- **Operating**
  3,050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).
- **Non-operating**
  9,144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).

Acoustic Noise

For acoustic noise specifications, please see the HPE BladeSystem c-Class Enclosures QuickSpecs located at:

- HPE BladeSystem c3000 Enclosure QuickSpecs:
  https://www.hpe.com/h20195/v2/GetPDF.aspx/c04128340.pdf
- HPE BladeSystem c7000 Enclosure QuickSpecs:
  https://www.hpe.com/h20195/v2/GetPDF.aspx/c04128339.pdf

HPE FlexFabric 10Gb 2-port 536FLB FlexibleLOM

Type

Integrated dual-port KR 10Gb FlexibleLOM with FlexFabric (Flex-10, FCoE, hardware-based iSCSI, iSCSI boot, TCP/IP offload engine, and autosensing 1Gb/10Gb Ethernet capability)

Network Processor

QLogic 57840S with integrated MAC/PHY

Data Transfer Method

x8 PCI Express 3.0

Network Transfer Rate

Two ports, each at 20Gbps full duplex; 40Gbps aggregate full duplex theoretical bandwidth

Notes:

– Each port is autosensing 1Gb/10Gb, and can interoperate with 1Gb or 10Gb HPE BladeSystem c-Class interconnect components. Both ports will operate at the same speed.

– Each port on the 536FLB adapter transmits from the server at 20Gbps (theoretical) full duplex.

IEEE Compliance

- 802.1p
- 802.1q
- 802.1qau
- 802.3ad
- 802.3ae

Technical Specifications

- 802.3ap (10GBase-KX4)
- 802.3x

Standard Features

- Full hardware offload of iSCSI and FCoE storage protocol processing for highest performance converged Ethernet data and storage networks.
- Dual-port 10GbE Flex-10 FlexibleLOM network adapter that provides the flexibility to choose the type of LOM to meet growing infrastructure needs
- Industry-leading throughput and latency performance
- Supports the HPE Flex-10 blade interconnect technology
- User configurable bandwidth settings when combined with the 10Gb Flex-10 Virtual Connect
- module. From 100Mb/s to10Gb/s on up to four "Physical Function" NICs per port, in increments of 100Mb/s for NIC. The combined bandwidth of NICs cannot exceed port bandwidth i.e. 10 Gb.
- Up to 40Gb/s bi-directional near line rate throughput
- Hardware acceleration and offloads for stateless TCP/IP, TCP Offload Engine (TOE)
- Improved small packet performance
- Support for Preboot eXecution Environment (PXE)
- Integrated PHY and MAC
- Supports for SR-IOV
- Support for Network Partitioning (NPAR)

HPE FlexFabric 20Gb 2-port 650FLB FlexibleLOM

Type
Integrated dual-port KR2 20Gb FlexibleLOM with FlexFabric (Flex-20, FCoE, RoCE, Tunnel Offload with VXLAN/NVGRE, hardware-based iSCSI, iSCSI boot, TCP/IP offload engine, and autosensing Ethernet speed capability)

Network Processor
Emulex XE-104

Data Transfer Method
x8 PCI Express 3.0

Network Transfer Rate
Two ports, each at 40 Gbps bi-directional; 80 Gbps aggregate bi-directional theoretical bandwidth

IEEE Compliance

- 802.3ae
- 802.1Q
- 802.3x
- 802.1p
- 802.3ad/LACP
- 802.1AB(LLDP)
- 802.1Qbg
- 802.1Qbb
- 802.1Qaz
- 802.3ap

Standard Features

- Dual 20Gb ports provide up to 80Gb bi-directional per adapter
- Multi-speed adapter operates at either 20GbE or 10GbE
- Converges FCoE or RoCE with LAN traffic on a single Ethernet wire
- Tunnel Offload support for VXLAN and NVGRE
- RDMA over Converged Ethernet (RoCE) for greater server efficiency and lower latency (6125XLG only)
- Advanced storage offload processing freeing up valuable CPU cycles
- Supports UEFI and legacy boot options
- Mixed Storage - supports NIC + FCoE on one port, and NIC + iSCSI on the other
- Concurrent Storage - concurrently supports NIC, FCoE, and iSCSI storage functions on the same port (NIC + FCoE + iSCSI)
- Industry-leading throughput and latency performance
- Supports the HPE Flex-20 blade interconnect technology
- Over eight million small packets/s, ideal for web/mobile applications, mobile messaging, and social media
- User configurable bandwidth settings when combined with the 20Gb Flex-20 Virtual Connect module. From 100Mb/s to10Gb/s on up to four "Physical Function" NICs per port, in increments of 100Mb/s for NIC. The combined bandwidth of NICs cannot exceed port bandwidth i.e. 20 Gb/s.
- Greater bandwidth with PCIe 3.0
- Jumbo Frames support
- Supports Wake On LAN (WOL)
- Support for Preboot eXecution Environment (PXE)
- Support for Microsoft Windows SMB Direct
- Optimized host virtualization density with SR-IOV support

Environment-friendly Products and Approach - End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: **http://www.hpe.com/info/recycle .**To recycle your product, please go to: **http://www.hpe.com/info/recycle** or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: **http://www.hpe.com/info/recycle** .These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
03-Aug-2020	Version 22	Changed	Configuration Information, Core Options, and Additional Options sections were updated.
22-Jun-2020	Version 21	Changed	Core OIptions and Additional Options sections were updated. Rebranding applied to document
06-Apr-2020	Version 20	Changed	Overview, Standard Features and Configuration Information sections were updated.
02-Mar-2020	Version 19	Changed	Overview, Standard Features, Optional Features, Configuration Information, and Core Options
02-Dec-2019	Version 18	Changed	Configuration Information and Additional Options sections were updated.
07-Oct-2019	Version 17	Changed	SKUs added to document in Additional Options section and obsolete SKUs were deleted.
05-Aug-2019	Version 16	Added	SKUs added: P18424-B21, P18432-B21, P18420-B21, P18430-B21, P18434-B21, P18438-B21, P18436-B21, P18422-B21, P18426-B21, P18428-B21.
		Removed	Obsolete SKU was deleted: 875585-B21, 845264-B21.
01-Jul-2019	Version 15	Changed	Standard Features, Configuration Information - Factory Integrated Options, and Core Options sections were updated.
		Removed	Obsolete SKU was deleted: P11872-L21
03-Jun-2019	Version 14	Changed	Overview, Service and Support, Configurations Information - Factory Integrated Models, Core Options, and Memory sections were updated.
		Added	SKUs added: P11875-L21, P11873-L21, P11872-L21, , P11870-L21, P11869-L21, P11864-L21, P07190-B21, P07192-B21, P07194-B21, P07196-B21, P07198-B21P13695-B21, P13697-B21, P10218-B21, P10216-B21, P10214-B21, P10208-B21, P10210-B21, P10212-B21, 877994-B21, 877998-B21, P07179-B21, P07181-B21, P07183-B21, P07185-B21, P13699-B21, P13701-B21, P13703-B21, P06952-B21.
		Removed	Obsoleted SKU was deleted: 877994-B21
02-Apr-2019	Version 13	Changed	Overview, Standard Features, Models, Configuration Information, Core Options, and Memory sections.
		Added	SKUs added in Configuration Information, Core Options and Memory sections: P00918-B21, P00920-B21, P00922-B21, P00924-B21, P00930-B21, P00926-B21, P00928-B21, P11877-L21, P11876-L21, P06821-L21, P06820-L21, P06819-L21, P06967-L21, P06818-L21, P06817-L21, P11865-L21, P06816-L21, P11862-L21, P06815-L21, P06813-L21, P06811-L21, P06810-L21, P06809-L21, P06966-L21, P06808-L21, P06807-L21, P06806-L21, P06805-L21, 512485-B21, 512486-B21, 512487-B21, BD505A, BD506A, E6U64ABE, BD507A, E6U59ABE.
		Removed	SKUs were deleted: E6U63ABE, BD502A, E6U60ABE, 512488-B21.
03-Dec-2018	Version 12	Changed	Overview, Standard Features, Configuration Information - Factory Integrated Models, Core Options, Additional Options, and Memory sections were updated.
		Added	SKUs added in Core Options and Related Options sections: P10220-B21, P10222-B21, P10214-B21, P10224-B21, P10216-B21, P10226-B21, P10218-B21, P04517-B21, P04519-B21, P04521-B21, P04523-B21, P09712-B21, P09716-B21, P09722-

Summary of Changes

			B21, P04525-B21, P04527-B21, P04533-B21, P04537-B21, P04539-B21, P09088-B21, P09090-B21, P09092-B21, P09094-B21, P09096-B21, P04541-B21, P09098-B21, P04543-B21, P09100-B21, P04545-B21, P09102-B21, P04547-B21.
		Removed	SKUs deleted in Core Options and Related Options sections: 875949-L21, 877764-B21, 877776-B21, 877782-B21, 875478-B21, 875474-B21, 875470-B21, 875483-B21, 872481-B21.
13-Nov-2018	Version 11	Changed	Overview and Standard Features sections were updated.
		Removed	Obsolete SKU was deleted: 875949-L21, 877984-B21, 877746-B21, 877764-B21, 877776-B21, 877782-B21, 880295-B21.
Date	**Version History**	**Action**	**Description of Change**
01-Oct-2018	Version 10	Changed	Optional Features and Core Options sections were updated.
		Added	SKUs added: P04474-B21, P04476-B21, P04478-B21, P04480-B21, P04482-B21, P07922-B21, P07926-B21, P07930-B21, P06584-B21, P06586-B21, P06588-B21, P06590-B21, P06592-B21.
06-Aug-2018	Version 9	Changed	Overview, Configuration Information - Factory Integrated Models, Core Options, and Additional Options sections were updated.
		Added	SKU added in Configuration Information - Factory Integrated Models section: 875949-L21
04-Jun-2018	Version 8	Changed	Standard Features, Configuration Information-Factory Integrated Models, Core Options, Additional Options, Memory, and Technical Specifications sections were updated.
		Added	SKUs added in QuickSpecs: 875956-L21, 875954-L21, 872009-L21, 872006-L21, 872012-B21, 875583-B21, 875585-B21, 875579-B21, 875581-B21, 878014-B21, P04556-B21, P04560-B21, P04564-B21, P04566-B21, P04570-B21, 873351-B21, 873355-B21, 873357-B21
		Removed	SKUs removed: 872008-L21, 872008-L21, 872012-B21, 875317-B21, 875319-B21, 880875-B21, 880877-B21.
02-Apr-2018	Version 7	Changed	Service and Support, Configuration Information - Factory Integrated Models, Core Options, and Additional Options sections were updated.
		Added	SKUs added in Core Options, and Additional Options sections: 845264-B21, 875587-B21, 875589-B21, 875591-B21, 877984-B21, 877986-B21, 877988-B21, 875593-B21, 875595-B21, 875597-B21, 877994-B21, 877998-B21 , 877740-B21, 877746-B21, 877752-B21, 877758-B21, 877764-B21, 877776-B21, 877782-B21, 877788-B21, 880295-B21, P00896-B21, 870753-B21, 870757-B21, 870759-B21, 870765-B21, 765464-B21, 832514-B21, 765466-B21, 881457-B21, 655710-B21, 765455-B21, 880875-B21, 880877-B21, 875330-B21, 875326-B21, 870144-B21, 875313-B21, 875311-B21, 872390-B21, 872392-B21, 872394-B21, 870148-B21, 873359-B21, 873363-B21, 873365-B21, 873367-B21, 872374-B21, 872376-B21, 872382-B21, 872386-B21, 875478-B21, 875474-B21, 875470-B21, 875483-B21, 872481-B21, 872479-B21, 872477-B21, 872475-B21, 875513-B21, 875511-B21, 875509-B21, 875503-B21.
12-Feb-2018	Version 6	Changed	Standard Features, Configuration Information - Factory Integrated Models, Core Options, Additional Options, and Memory sections were updated.
		Added	SKUs added in Configuration Information - Factory Integrated

Summary of Changes

			Models section: 700076-B21, 700767-B21, 700748-B21, 665246-B21, 655639-B21, 700065-B21, 700763-B21, 766490-B21, 873351-B21, 873355-B21, 873357-B21, 877740-B21, 875503-B21, 877746-B21, 875509-B21, 877752-B21, 875511-B21, 877758-B21, 875513-B21, 877764-B21, 880875-B21, 880877-B21, 875587-B21, 875589-B21, 875591-B21, 875317-B21, 875319-B21, 875498-B21, 875500-B21, 872390-B21, 872392-B21, 872394-B21, 875311-B21, 875313-B21, 875326-B21, 875330-B21, 870144-B21, 870148-B21, 880295-B21, 875483-B21, 877776-B21, 875470-B21, 877782-B21, 875474-B21, 877788-B21, 875478-B21, 877994-B21, 877998-B21, 875488-B21, 875490-B21, 875492-B21, 872374-B21, 873359-B21, 872376-B21, 873363-B21, 872382-B21, 873365-B21, 872386-B21, 873367-B21.
		Removed	SKUs deleted in Configuration Information - Factory Integrated Models, Core Options, and Additional Options sections: 875954-L21, 875955-L21, 875956-L21, 877851-L21, 877807-L21, 875952-L21, 875953-L21, 872009-L21, 872006-L21, 872007-L21, 700066-B21, 700764-B21, 766491-B21, 684214-B21, 759208-B21, 785067-B21, 759210-B21, 759212-B21, 781516-B21, 785069-B21, 781518-B21, 791034-B21, 870763-B21, 875492-B21, 872359-B21, 872363-B21, 869374-B21, 869376-B21, 869378-B21, 869384-B21, 869386-B21.
Date	**Version History**	**Action**	**Description of Change**
06-Nov-2017	Version 5	Changed	QuickSpecs was updated.
		Removed	Obsolete SKUs were deleted: 777262-B21, 777264-B21, 875494-B21, 875496-B21, 736936-B21, 736939-B21, 764892-B21, 764904-B21, 764906-B21, 764908-B21, 815605-B21, 822594-B21, 822593-B21, 815606-B21, 765034-B21, 765036-B21, 765038-B21, 765044-B21.
25-Sep-2017	Version 4	Changed	Standard Features section was updated.
		Added	SKU added in Core Options section: 881457-B21.
07-Aug-2017	Version 3	Changed	Standard Features and Configuration Information - Factory Integrated Models sections were updated.
		Added	SKUs added: 875943-L21, 875944-L21, 877807-L21, 875945-L21, 875946-L21, 875947-L21, 875488-B21, 875490-B21, 875492-B21, 875494-B21, 875496-B21, 875498-B21, 875500-B21.
17-Jul-2017	Version 2	Changed	Information in QuickSpecs was updated.
11-Jul-2017	Version 1	Created	New QuickSpecs.

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